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May/June 2009

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Mussel power

Targeting baby tarpon

Small boat navigation: dead reckoning

Pretty, pink and unique... roseate spoonbills

Wildlife watching after the lights go out

Send us your best shot!

2009 Florida Wildlife Photo Contest

Florida Wildlife Magazine is pleased to announce its 2009 photo contest. Winning entries will be published in the January/February 2010 issue of *Florida Wildlife* and posted on the magazine's Web site.

FILE PHOTO

Categories

- **Bird watching.** Birds living in or visiting Florida.
- **Living wild.** Any wild animals, other than birds, pictured in a Florida habitat. This includes mammals, reptiles, amphibians, insects and fish.
- **Up close.** A close-up or macro view of nature. Plants, natural materials or animals may be pictured.
- **Natural scenes.** Where Florida's animals live.

Prizes

Grand prize: $300 awarded for best overall photograph.

First place winners in each category will be awarded $125.

Second prize winners will receive $100.

Third place winners will receive $75.

Awards of Merit may be given. Winners will receive $50.

Rules:

- Wildlife pictured must be live – pictures of mounted wildlife are not eligible. Images of domestic animals (dogs, cats, cattle, etc.) are not eligible.
- Images must be taken within the state of Florida.
- All entries must be received by 5 p.m. Friday, Aug. 7, 2009. Entries received after this date will be automatically disqualified and returned to the entrant.
- Employees of the FWC and their immediate families are not eligible.
- Photographs previously submitted to or published by *Florida Wildlife* Magazine or any other FWC publications are not eligible.
- One-time publication rights to each photograph must be available.
- All entries will be judged by *Florida Wildlife* Magazine staff and other employees of the FWC. The decisions of the judges are final.
- The judges reserve the right to decide whether entries in a category merit three awards and to decide under which category a picture will be judged. Three prizes may not be awarded in all categories.
- Winning entries posted on the Web site may have watermarks added.

Entry Procedures:

- No more than 20 entries will be accepted from a single entrant.
- If the photographs are to be returned to the photographer, a self-addressed mailer with sufficient postage for return of materials via U.S. mail must be included with entry.
- Entries must contain only photo contest material. No other correspondence should be included.
- A single, legible, letter size (8 1/2" x 11") log must accompany each entry. A pdf log may be downloaded from the magazine's Web site (www.FloridaWildlifeMagazine.com) but is not required. The log sheet must contain the following information:

  Name of photographer
  Mailing address
  Telephone number, with area code
  E-mail address
  Category
  Subject of photo
  Where photo was taken
  When photo was taken

Mail entries to:
Florida Wildlife Photo Contest
620 South Meridian Street,
Tallahassee, FL 32399-1600

- Entries may be submitted as:

  Prints. Approximately 8"x10" and not framed or matted. Image must be as large as paper size will allow. 5"x7" or smaller will not judged.

  Digital images. Digital images may be submitted on a CD. For tracking purposes, a print or laser copy of each digital image should be submitted. This may be a letter-size contact sheet(s) up to full-page printouts. Images on CD will be judged, not the printout.
- The photographer's name and address must appear and be legible on the back of each print or on the CD. The photographer's name or other information may not appear on the front of any print.
- Manipulation of images should be kept at a minimum (such as saturation, contrast, dodging, eliminating dust spots, etc.). Images in which content has been eliminated, added, rearranged, etc. will not be accepted.
- Entries will be returned via U.S. mail beginning in January 2010.
- Entrant's information (address, phone, e-mail) will not be shared or used by the FWC for any reason other than communicating with entrant regarding this contest.

Contents **May/June**

6

Director's Message

By Kenneth D. Haddad

Florida is a bird watcher's paradise.

7

When the lights go out

By Kristin Wood

Instead of flipping on the television, step outside for an even better show.

10

News & Notes

Compiled by FWC staff

Brief stories about nature, wildlife and outdoor recreation.

20

FWC's Division of Law Enforcement receives "seal of approval"

By Carol M. Pratt

The Division of Law Enforcement is officially accredited by the Commission for Law Enforcement Accreditation.

21

The black-necked stilt in a Florida wetlands habitat

By Charlie and Charlotte Corbeil

These striking black and white birds capture the attention of an avid birder and photographer.

24

Mussel power

By Doug Alderson

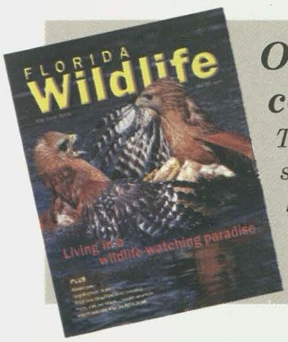
Biologist Jerry Ziewitz has a passion for the threatened and endangered mussels of the Apalachicola and Chipola rivers.

28

Limpkins and moonlight on the Wacissa

By Liz Sparks

Two kayakers paddle the Wacissa River in search of the elusive limpkin.



On the cover:

Two red-shouldered hawks locked in battle by Joe Richard

30

Agriculture Commissioner warns of possible infestations in firewood

By Denise D. Feiber

Destructive beetles and diseases can be transported by people bringing their own firewood into this state.

31

Claws – exploring the world of Florida's crab species

By Henry Cabbage

Florida's beaches and estuaries team with scuttling crustaceans.

34

Bridging the technology gap with our children

By FWC staff

Studies show direct exposure to nature can be essential for a child's health.

36

Pretty, pink and unique... roseate spoonbills

By Jack Rogers

Those flashy pink wading birds with the funny bills aren't flamingos.

40

Creels, aren't they old fashioned fish baskets?

By Bob Wattendorf and Jason Dotson

Creel surveys are a critical source of information for determining how Florida's freshwater fisheries are doing.

42

Small boat navigation 102: Dead reckoning

By Henry Cordova

Learn the basics of navigating in which you make judgements of a ship's position based on its estimated speed and course.

46

Volunteers see wildlife seasonal changes up close and personal

By FWC staff

FWC volunteers form a bond to a tract of public land and its inhabitants.

47

Targeting baby tarpon

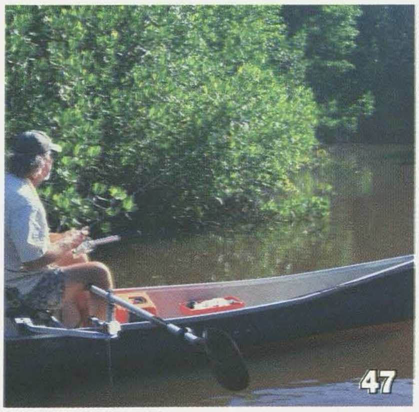
By Capt. Fred Everson

Baby is a relative term for the large juvenile tarpon that inhabit Southwest Florida's backcountry.

CHARLES CORBEIL

LIZ SPARKS

THOMAS J. DUNKERTON



CAPT. FRED EVERSON

Contents **continued**

50
Field Notes
Compiled by FWC staff
Stories of the challenges FWC law enforcement officers face daily.

51
Witnessing a battle between hawks
By Joe Richard
A photographer comes upon two red-shouldered hawks in the midst of watery combat.

54
FWC Update
Compiled by FWC staff
News from the Commission.

59
Nature's beautiful bug zappers live in our chimneys
By Sandy Beck
A single chimney swift can catch thousands of insects each day.

62
Good shots help others
By FWC staff
The annual FWC photography contest raises money for charity.

66
A whale of an experience of the right kind
By Joy Hill
FWC officers are treated to a right whale display, while making sure boaters don't get too close to the marine mammal.

67
That bunch of seaweed on the beach teems with life
By Patricia Behnke
Beach wrack is a pivotal part of the beach ecosystem.

68
Wildlife Watch
Compiled by FWC staff
Wildlife happenings around the state.

69
Calendar
Compiled by FWC staff
Events around the state.

70
Fishin' Follies
By Andy Sabol
The "deal"

Volume 62 Issue 3

FLORIDA Wildlife

CELEBRATING OUR HERITAGE OF HUNTING, FISHING AND NATURE-BASED RECREATION

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Director's **Message**

Florida is a bird watcher's paradise

Kenneth D. Haddad

Executive Director
Florida Fish and Wildlife Conservation Commission

This is the time of year that gave Florida its name. When Juan Ponce de Leon landed here in 1513, he found a land with abundant flowers. He named it Florida, which roughly translates to flowered land.

Along with the flowery makeup Mother Nature puts on in the springtime through summer, many of the birds that live in Florida wear their bright breeding plumage that enables them to attract mates. May, June and July are the primary months for breeding birds in Florida.

People come to Florida from all over the world to see the wild birds we have here. In fact, much of Florida's economy revolves around the demand for opportunities to view birds and other wildlife in their natural habitats. Even native Floridians are captivated by the spectacular beauty of natural Florida this time of year. Many of us venture into wilderness areas or just pull up a lawn chair in the backyard to relish the grand show happening all round us. Nests appear in trees and birds set up territories. It's heartwarming to watch them feed their young and, eventually, teach them how to fly and hunt or forage for their own food.

Florida is a bird watcher's paradise. Roughly 800,000 people per year visit Florida for the primary purpose of viewing wildlife, especially birdlife.

The Great Florida Birding Trail is a 2,000-mile tour of prime sites for bird lovers to view Florida's bird species. Bald eagles, tiny hummingbirds, colorful painted buntings, beautiful roseate spoonbills, burrowing owls and others – more than 470 species – charm millions of bird watchers in a variety of habitats.

This issue of *Florida Wildlife* celebrates the birdlife that resides here or migrates through our state. If you've never taken the time to sit back and appreciate this treasure, now's the time to do it. The show is happening right before our eyes; it's magnificent, and it won't cost you a cent. **FW**

Roughly 800,000 people per year visit Florida for the primary purpose of viewing wildlife, especially birdlife.

When the lights go out

KEVIN ENGE

The spadefoot frog spends its day snug in a burrow and emerges at night to look for insects, worms and other prey.

By Kristin Wood

The sun is sinking below the horizon, and the moon and stars will quickly emerge. Instead of flipping on the television, watch an even better show appearing outside.

ROBERT J. LA FOLLETTE

The triple-chambered bat house you installed last fall is starting to come alive. First, you hear a high-pitched twittering, followed by the sight of Brazilian free-tailed bats steadily descending from the house. Several hundred bats make a swirling exodus into the night sky as they head out on a mission to eat all the moths, flies and beetles they can find. Some can eat as many as 3,000 insects in a single night. Using echolocation, they zero in on their unsuspecting prey.

The bat show is over, and you slowly stroll into the woods when a loud, whistling call jars the night, "chuck-will's-widow." Several times, the call is repeated in rapid succession and then silence falls.

In front of you, a big, buff-brown bird silently takes flight, revealing the instigator of the call, a chuck-will's-widow. Named after the call it makes, the chuck-will's-widow is a night predator, searching for insects as do the Brazilian free-tailed bats. The bird doesn't use echolocation but relies on its wide mouth to catch flying insects.

Chinsegut Nature Center offers regularly scheduled night walks where participants will see or hear a variety of night creatures, depending on the time of the year. Visit MyFWC.com/Chinsegut for more information.

ALLAN HALLMAN

Above and below: *The southern flying squirrel nests in tree cavities and nest boxes, including purple martin houses. It is nocturnal and feeds mostly on acorns, pecans, insects, bird eggs and nestlings, berries, fruit, seeds and buds.* ***Facing page, clockwise from top right:*** *Primarily a nocturnal hunter, the barred owl can occasionally be spotted during the day; trying to catch fireflies can keep a youngster fascinated as long as the beetles glow; the chuck-will's-widow is much more often heard than seen.*

ALLAN HALLMAN

The bird quickly flies away as your attention is drawn to a hopping creature in front of you. In the warm, spring evening an eastern spadefoot toad leaves its earthen burrow in search of what seems to be the dinner of choice tonight – insects.

You shine your flashlight at this hopping amphibian, revealing its yellowish eyes with vertical pupils. The eastern spadefoot toad stops hopping as you center the light on its face. It starts using its spade, a scale-like appendage on its hind feet, to dig a hole to escape from what might be a possible predator looking for an amphibian meal. The toad soon hides itself, so you move on.

A light shower begins, and the warmth of the night keeps you outside instead of seeking cover. The shower quickly passes, reinforcing your decision to enjoy the night. Ahead, lights are starting to show in response, in part, to the light rain that has fallen.

The fireflies are coming out. Lightning bugs, fireflies and glowworms are all part of an incredible Florida night-light show that is free and guaranteed to please. Dazzling green and yellow lights blink off and on and swirl around you.

Lightning bug, firefly and glow worm are common names for the same group of insects that are actually beetles. In Florida, there are 57 species that make up the firefly family, *Lampyridae*. Spring and early summer bring out these beetles en masse, especially along forest edges, marshes and meadows. A luminous light organ is on the tip of the abdomen, which aids most firefly species' courtship. Many adult male fireflies blink their coded message to attract a female who, in turn, will answer with her own flash from the ground. Each of Florida's most common firefly species has its own special flashing pattern.

Glow worm is actually another name for the juvenile form of a firefly. They can be found on the forest floor looking for snails, worms and other prey. The glowing larva wanders around the forest floor and, up close with the flashlight, looks like a tiny alligator with lights under its tail.

Intermittent twittering noises from the trees above distract you from the fabulous light show, and you are off again on your nocturnal hike. As you near the trees, the noises suddenly come to a stop. A quick look with the flashlight reveals nothing, so you continue walking.

A high-pitched twittering again briefly sounds off. This time when you look up, you are able to catch a glimpse of a small furry animal gliding from one oak tree to an adjacent oak tree. You consider yourself fortunate to have seen a southern flying squirrel, a nocturnal mammal more often heard than seen.

ALLAN HALLMAN

DAVE ALMQUIST

MYRNA ERLER-BRADSHAW

These small mammals cannot really fly, but instead glide from tree to tree. A large flap of skin stretched between the rear and front legs enables them to parachute from tree to tree. The flying squirrel takes the place of its diurnal cousin, the gray squirrel, in the night forest. Night activity for flying squirrels includes looking for their favorite nuts, especially acorns. Other night menu items include buds, seeds, berries, mushrooms, insects, lizards, mice and eggs

The mystery noise is no longer a mystery, so you continue down the trail. You click on your flashlight and, to your surprise, hundreds of diamond-like eyes shine back at you.

Holding the flashlight up by your face, you bravely march forward to see what animal is on the forest floor. As you approach the eyes, you realize the eyes belong to wolf spiders. These nocturnal ambushers hunt for their prey on the forest floor and rely on their quick action to grab their prey instead of using a web. The mystery solved, you realize that you are not a nocturnal animal, and your bed is calling you. As you head back into the house, a barred owl calls and ends your night with a serenade. Who needs T.V. when the best show is outside? FW

News & **Notes**

$740 million goes to states for fish and wildlife projects

U.S. Department of the Interior Secretary Ken Salazar announced that more than $740.9 million will be distributed to fish and wildlife agencies in the 50 states and commonwealths, the District of Columbia and territories to fund fish and wildlife conservation, boater access to public waters, and hunter and aquatic education.

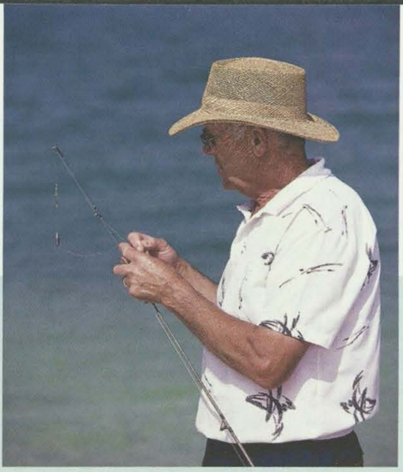
These Wildlife and Sport Fish Restoration Programs funds come from excise taxes and import duties on sporting firearms, ammunition, archery equipment, sportfishing equipment, electric outboard motors and fuel taxes attributable to motorboats and small engines.

"The funds raised under the Wildlife and Sport Fish Restoration Programs have helped conserve our fish and wildlife resources and provide opportunities for outdoor recreation for more than half a century. These investments, which help create jobs, while protecting our nation's natural treasures, are particularly important in these tough economic times," Salazar said. "All those who pay into this program – the hunting and fishing industries, boaters, hunters, anglers and recreational shooters – should take pride in helping to conserve our land and its fish and wildlife and provide benefits to all Americans who cherish the natural world and outdoor recreation."

The wildlife restoration apportionment for 2009 totals nearly $336 million, with more than $64.7 million marked for hunter education and firearm and archery range programs. The sport fish restoration apportionment for 2009 totals more than $404 million.

Pittman-Robertson Wildlife Restoration Act funds are used by fish and wildlife agencies to manage wildlife populations, conduct habitat research, acquire wildlife lands and public access, carry out surveys and inventories, administer hunter education, and construct and maintain shooting ranges.

Sport fish restoration is funded by the collection of excise taxes and import duties on sport fishing equipment, motorboat and small engine fuels, and pleasure boats. These funds are used to pay for stocking fish, acquiring and improving sport fish habitat, providing aquatic resource education opportunities, conducting fisheries research, maintaining public access, and the construction at boat ramps, fishing piers and other facilities for recreational boating access.



FILE PHOTO

More than 62 percent of wildlife restoration funds are used to buy, develop, maintain and operate wildlife management areas. Since the program began, fish and wildlife agencies have acquired 68 million acres through fee simple ownership, leases or easements, and operated and maintained more than 390 million acres for hunting. In addition, agencies certified more than 9 million participants in hunter education.

"This source of conservation funding is important, not only measured by its dollar amount, but also by legislative safeguards preventing its diversion away from state fish and wildlife agencies," said Rowan Gould, acting director of the U.S. Fish and Wildlife Service.

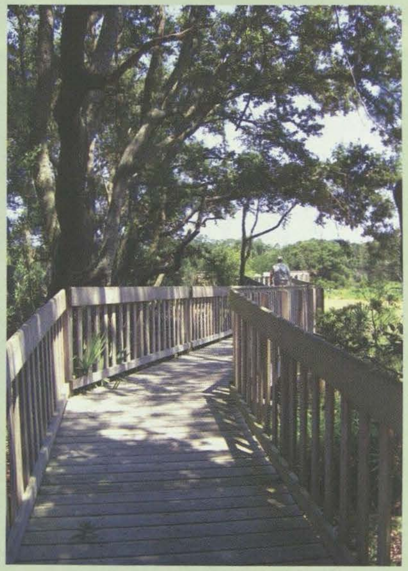
Visit the service's Wildlife and Sport Fish Restoration Program Web site at wsfrprograms.fws.gov.

Top 10 ways to celebrate National Trails Day

On June 6, American Hiking Society and hikers across the country will celebrate the 16th annual National Trails Day, a long-standing celebration of America's magnificent trail system and its supporters. Below are the top 10 ways Americans can get out and connect with nature through trails this June 6.

1. Plan a family outing to a favorite hiking trail or visit a new trail in the community.
2. Take a guided night hike and explore the many nighttime sights and sounds.
3. Participate in a trail maintenance project to ensure area trails remain safe and enjoyable.
4. Take part in an interpretive hike to learn about local flora and fauna.
5. Learn or practice GPS skills with geocaching or letterboxing.
6. Volunteer at a community National Trails Day event and meet fellow trail supporters.
7. Attend a community trail festival to learn different outdoor skills and discover local outdoor opportunities.
8. Introduce a child to the joys of hiking and trails.
9. Saddle up a horse or grab a bike and ride new trails in your area.
10. Grab a paddle and discover local water trails

Whether you hike, run, ride, paddle or volunteer, there are countless ways to join the American Hiking Society on the trail. For a list of NTD events across the country and to find one in your area, visit AmericanHiking.org/NTD.aspx.



LIZ SPARKS

Many of Florida's wildlife management areas, including Guana River (above), have outstanding trails.

Governor Crist tours Beau Turner Youth Conservation Center

TIM DONOVAN

Governor Charlie Crist and Beau Turner tour the Beau Turner Youth Conservation Center, the state's first privately developed conservation facility for youths.

Gov. Charlie Crist toured Florida's first privately developed conservation facility for youths with media mogul and philanthropist Ted Turner and his son Beau Turner, whose vision and generosity made the center a reality.

The Beau Turner Youth Conservation Center, in Jefferson County, opened in March 2008 and is the only conservation center in the state that runs entirely by solar power. The facility, operated by the FWC, provides youths the opportunity to learn and develop skills that will encourage them to get outdoors and enjoy Florida's abundant fish and wildlife resources.

"The center is a wonderful facility where Florida's children can enjoy her natural beauty while learning how to protect it," Crist said. "It is a reminder of the great things we can accomplish for our environment by working together - state agencies and private organizations and individuals - for a better Florida."

The goal of the 160-acre property, leased at no cost to the FWC by Beau Turner, is to create a conservation ethic among children through programs designed to build confidence in outdoor settings, and greater knowledge of the local ecosystem and wildlife management techniques.

"In an age where we're competing against video games and computers, it's important that we introduce our children to outdoor activities and that our communities continue to protect natural areas," Beau Turner said.

The facility features a stocked fishing pond, nature (or wildlife viewing) trails, managed impoundments for waterfowl, planted fields for small game, a state-of-the-art rifle range, 3-D and Olympic-style archery courses, and a trap-shooting facility that throws biodegradable clay pigeons.

"The focus is reaching out to kids who wouldn't otherwise have access to these kinds of outdoor activities, and the reward is the smiling faces of kids and parents who are developing a lasting appreciation for conservation of Florida's wild lands and wildlife," FWC Commissioner Brian Yablonski said.

Summer classes for 12- to 16-year-old youths are available at the center, where gun safety, archery, fishing, shooting, wildlife management and other outdoor activities are taught. The FWC provides all necessary equipment and materials, and classes are free of charge. Youth hunts also take place on an adjoining 900 acres through the FWC's Youth Hunting Program of Florida.

"The Beau Turner Youth Conservation Center is a great example of the significant impact private landowners can make by encouraging conservation and environmental stewardship," Ted Turner said. "I'm thrilled with Gov. Crist's commitment to environmental causes and to ensuring that our kids and grandkids have a healthy planet where they can live, learn and play."

For more information, visit MyFWC.com/Hunting.

Study shows climate change largely irreversible

A new scientific study led by the National Oceanic and Atmospheric Administration reaches a powerful conclusion about the climate change caused by future increases of carbon dioxide: To a large extent, there's no going back.

The study, led by NOAA senior scientist Susan Solomon, shows how changes in surface temperature, rainfall and sea level are largely irreversible for more than 1,000 years after carbon dioxide (CO^2) emissions are completely stopped.

"Our study convinced us that current choices regarding carbon dioxide emissions will have legacies that will irreversibly change the planet," Solomon said.

The study examines the consequences of allowing CO^2 to build up to several different peak levels beyond present-day concentrations of 385 parts per million and then completely halting the emissions after the peak. The scientists found that the scientific evidence is strong enough to quantify some irreversible climate impacts, including rainfall changes in certain key regions and global sea level rise.

The study notes that decreases in rainfall that last not just for a few decades but over centuries are expected to have a range of impacts. Such regional impacts include decreasing human water supplies, increased fire frequency, ecosystem change and expanded deserts. Climate impacts were less severe at lower peak levels. But at all levels added carbon dioxide and its climate effects linger because of the ocean.

The scientists emphasize that increases in CO^2 that occur in this century "lock in" sea level rise that would slowly follow in the next 1,000 years. Rising sea levels would cause "...irreversible commitments to future changes in the geography of the Earth, since many coastal and island features would ultimately become submerged," the study states.

News & **Notes**

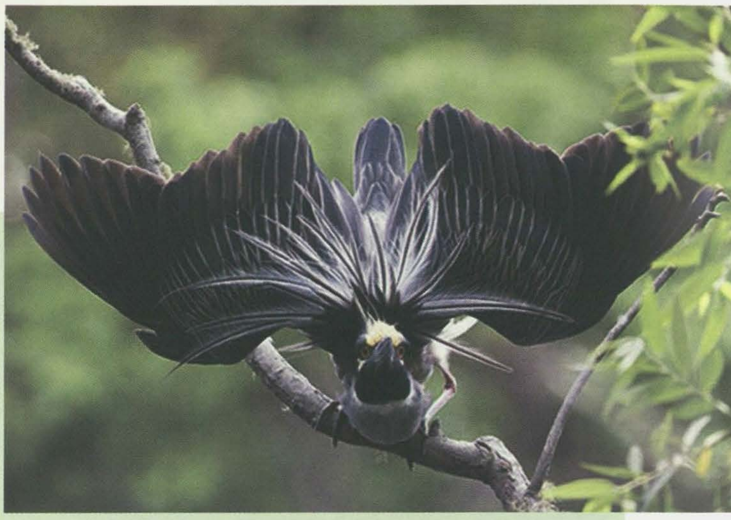
Government review confirms red knot should be listed as endangered species

The U.S. Fish and Wildlife Service has released its revised list of species that are candidates for listing under the Endangered Species Act. Designation as a candidate species is not a requirement for listing under the ESA, and FWS can, and regularly does, list animals and plants without first placing them on the candidate list.

The rufa red knot, a reddish-brown shorebird slightly larger than an American robin, migrates annually from Tierra del Fuego to its arctic breeding grounds, stopping to rebuild critical energy reserves by feasting on horseshoe crab eggs in Delaware Bay.

Only 14,800 red knots were counted in 2007 at the species' primary wintering areas, a 15 percent decline from 2006, and a 75 percent decline from 1985. The results of several scientific studies have shown that a major reason for this decline is a fall in the number of available horseshoe crab eggs due to overfishing of the crabs themselves, which are used as bait in conch and eel fisheries.

"The U.S. Fish and Wildlife Service has once again confirmed that the red knot is increasingly threatened with extinction and deserving of heightened conservation measures, particularly immediate reductions in the commercial harvest of horseshoe crabs, whose eggs comprise the knot's primary food source," said Darin Schroeder, American Bird Conservancy's Vice President of Conservation Advocacy.



DAVID MOYNAHAN

Yellow-crowned night-heron in mating plumage and posture.

FWM contributor runner up in The Nature Conservancy photo contest

David Moynahan of Crawfordville, a regular contributor to *Florida Wildlife*, was a runner up in the The Nature Conservancy's 3rd Annual Photo Contest. More than 19,000 supporters logged onto the voting site to rank their favorite images. Moynahan was the only photographer with two images in the final 13 – chosen from more than 14,000 entries. His photo of yellow-crowned night-heron in mating plumage and posture was awarded Best Nature Runner Up, tying photographer Patrick Smith's photo of Pinnacle Rock, Point Lobos State Park, California. Howard B. Cheek from Kempner, Texas, was the Grand Prize winner with a photo of a female cardinal.

Moynahan's photo of a water lily in cypress swamp, Apalachicola National Forest, Leon County, was one of 13 photos in the finals. You can visit The Nature Conservancy's Web site at nature.org to view all the finalists' photos or submit your own photos.

FWC arrests seven suspected of shooting, killing protected birds

Simply by being in the right place at the right time, FWC officers were able to arrest a group of people suspected of shooting and killing protected birds.

Officer Dan Stermen was on routine patrol in Collier County, when he heard gunfire coming from the direction of a bird colony. As he got closer, he observed birds flying erratically and some falling from the sky. Stermen called for backup and waited near some cars that were parked on a peninsula leading to a lake. The area is marked "no trespassing."

Three men returned to their car in a boat. Officers saw firearms in the boat. Zachary J. Mato, Cullen M. Shaughnessy and Joseph W. Gursky were charged with felony trespass with a firearm and booked into Collier County Jail.

Four other people on the island were on foot and were ferried back to land. Keith G. Lisa, Alexander B. Wilhelm, Mark L. McClure and Stephanie M. Meads were charged with misdemeanor trespassing and booked into the jail.

Officers collected 21 dead birds at the scene. The birds had been shot. Some of the birds are classified as "species of special concern," which means they are protected under state law. Some of the protected birds found at the scene were white ibis and blue heron.

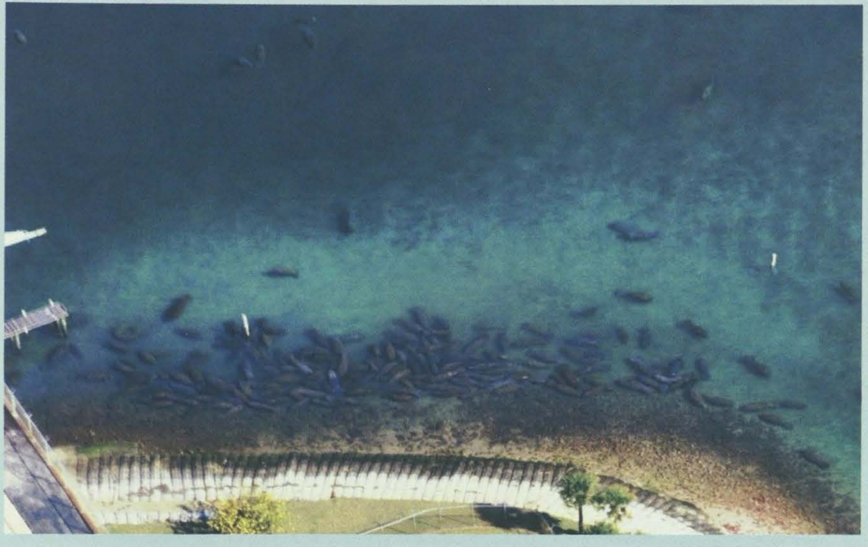
Some of the other birds found shot to death included tree swallows and cormorants. These birds are protected under the federal Migratory Bird Treaty Act.

"In my 27 years as an officer, I've never seen people deliberately shoot and kill birds and just leave them for dead," said FWC Lt. Wayne Maahs. "This is truly a heinous act."

FWC FILES

FWC officers took into evidence 21 birds that had been shot, including some listed as species of special concern.

FWC records high counts during statewide manatee survey



TOM REINERT

This aerial image from the manatee synoptic survey shows manatees gathering at the Florida Power and Light power plant at Rivera Beach during cooler temperatures the week of Jan. 19.

A team of scientists counted an all-time-high number of manatees during the annual manatee synoptic survey conducted the week of Jan. 19. The FWC's Fish and Wildlife Research Institute reported a preliminary count of 3,807 manatees statewide. A team of 21 observers from nine organizations counted 2,153 manatees on Florida's East Coast and 1,654 on the West Coast.

This year's count exceeded the previous high count from 2001 by more than 500 animals. In both years, survey conditions were favorable for aerial observations. Although synoptic results are not population estimates and should not be used to assess trends, the FWC is encouraged by this year's high count. Survey results are consistent with population models that show the manatee population appears to be increasing in Northwest Florida, along the Atlantic Coast and on the upper St. Johns River.

The synoptic survey is a count of manatees over a broad area. The survey provides researchers with a snapshot of manatee distribution and the minimum number of manatees in Florida waters at the time of the count.

Researchers have been conducting synoptic surveys since 1991, weather permitting, to meet the state's requirement for an annual count of manatees in Florida waters. Weather and manatee behavior affect synoptic survey counts. The best conditions for the synoptic survey occur during the coldest months of the year, when manatees gather at warm-water sites.

"Several cold fronts passed through Florida over a short time period, causing a large number of manatees to move to warm-water sites," said FWRI biologist Holly Edwards. "Good weather conditions allowed the manatees to be easily seen and counted, contributing to this year's high count."

FWRI researchers are testing new survey methods that will provide a population estimate for Florida manatees as outlined in the FWC's manatee management plan. The adjustments to the survey will help achieve more accurate results and reduce dependency on the weather.

For more information about manatees and synoptic surveys, visit research.MyFWC.com. To report a dead or distressed manatee, call the FWC Wildlife Alert Hotline at 888-404-FWCC.

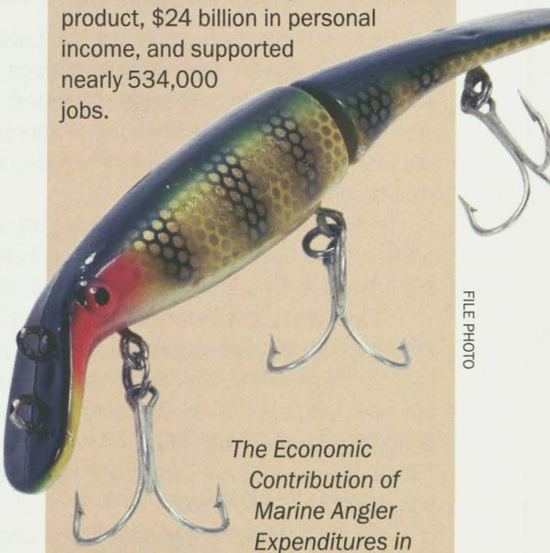
Recreational saltwater anglers boon for economy

Recreational saltwater anglers pumped more than $31 billion into the U.S. economy in 2006, with Florida, Texas, California, Louisiana and North Carolina receiving the largest share according to a new study issued by the National Oceanic and Atmospheric Administration's Fisheries Service.

At the national level, saltwater anglers are estimated to have spent $5.8 billion on trip-based expenses, such as ice, bait and fuel, and another $25.6 billion on fishing equipment and durable goods like fishing rods, fishing tackle and boats.

The top five coastal recreational fishing states are: Florida ($16.7 billion), Texas ($3.2 billion), California ($3 billion), Louisiana ($2.9 billion) and North Carolina ($2 billion).

In addition to quantifying angler expenditures, this study examines how these expenditures circulated through each state's economy and the national economy using a regional assessment. The $31.4 billion in total U.S. expenditures in 2006 contributed $82.3 billion in total sales, $39.1 billion to gross national product, $24 billion in personal income, and supported nearly 534,000 jobs.



FILE PHOTO

The Economic Contribution of Marine Angler Expenditures in the United States 2006 report is available online at spo.nwr.noaa.gov.

News & **Notes**

Christmas Bird Count documents 112 species at Everglades treatment wetland

MARGARET ENGLAND/ HENDRY-GLADES AUDUBON SOCIETY

An Everglades restoration project just south of Lake Okeechobee lived up to its reputation as a national bird-watching location as volunteers with the Hendry-Glades Audubon Society partnered with the South Florida Water Management District to document 112 species and more than 92,600 birds during the 109th national Christmas Bird Count this January. Known as "citizen science," bird counts are vital to studies of the long-term health and status of bird populations.

Of the diverse array of bird species sighted at the constructed wetland, American coots were by far the most abundant with 37,618 counted. Birders also took note of 31 snail kites, which are endemic to the Everglades area, and spotted some rarer species such as the short-tailed hawk and Cassin's kingbird, a species more common in states west of Texas.

The bird count at STA 5 served as a prelude to another partnership year of Audubon/SFWMD birding tours that showcase wildlife and public access on lands managed in perpetuity by the SFWMD for Everglades restoration. The approximately 6,000-acre constructed wetland, just south of Clewiston, is one of 489 sites on The Great Florida Birding Trail. Sponsored by the FWC, the sites are selected for their prolific bird watching or bird education opportunities.

Birding, a national pastime, is big business, with 48 million people observing birds both around the home and through vacation travel. Non-consumptive bird use (non-hunting activities) supported more than 19,000 jobs in Florida in 2006, and wildlife viewing activities generated more than $3 billion statewide that year, according to a state report. Second only to California, birding generates an estimated $477 million in retail sales in Florida every year.

Fast becoming renowned as havens for birds and wildlife, stormwater treatment areas are the water-cleaning workhorses of Everglades restoration, cleansing phosphorus from the water flowing into the remnant Everglades. During the past 15 years, SFWMD has constructed more than 45,000 acres of treatment wetlands to improve the quality of water entering the famed River of Grass.

For more information about recreation on public lands managed by the district, visit mysfwmd.gov. For information on Florida bird watching, visit floridabirdingtrail.com.

***Below:** Roseate spoonbills are very social and live in large colonies with other spoonbills, ibises, storks, herons and egrets. **Left:** The American kestrel is the smallest and most common North American falcon.*

FLORIDA'S FRESHWATER FRONTIER

Deer colorblind to orange, but if you glow ...

Another fall hunting season is over, and while the sport continues to be very safe, there have been some accidental shootings that could have been prevented. Not all of those who were involved in the shooting accidents were wearing the proper amount of sometimes-required and always-recommended hunter orange.

If hunters think they are reducing the likelihood that deer will see them by forgoing orange safety hats and vests, they are mistaken. What deer can and cannot see is surprising.

"Deer are somewhat colorblind," said Cory Morea, deer management program coordinator for the FWC.

"During the day, deer see colors in what we could consider blue to yellow-green," added Elina Garrison, a biologist with the FWC's Fish and Wildlife Research Institute. "Some believe they are completely red-green colorblind, like some humans," she said.

Wearing orange is a good practice when afield during any hunting season.

"Not properly identifying your target and what is beyond, is the leading cause of hunting fatalities," according to the FWC's 2007-08 Florida Hunting Incident Report.

Here is the rule in Florida: "It is unlawful to hunt deer or to accompany another person hunting deer on public lands unless each person is wearing a minimum of 500 square inches of daylight-fluorescent orange material as an outer garment... above the waistline."

Although animal vision is often much better than human sight, distinguishing colors in daylight is not a strong point for the white-tailed deer, although detecting UV light is. Some studies indicate deer can detect clothing made or washed with UV brighteners. If so, hunters not only should wear orange; they should be careful what else they wear in the woods to be more effective.

According to *"How Game Animals See and Smell,"* a book by Kurt von Besser of Atsko/Sno-Seal Inc., most camouflage clothes and laundry detergents contain UV brighteners, which deer can detect. He says that hunters can avoid brighteners by choosing camouflage outfits that are manufactured free of brighteners and by washing them only with a laundry detergent free of UV brighteners.

Environment provides Florida huge economic benefits

JOHNNY VILLARONGA

The tremendous financial benefits Florida receives from its beautiful natural habitats and protected conservation lands are documented and compiled in a new report released by The Nature Conservancy.

The report titled *"Economic Benefits of Land Conservation: A Case for Florida Forever"* makes clear the economic rewards of Florida Forever and of the state's commitment to protecting conservation land.

The Florida state park system had an overall direct economic impact of more than $1 billion on local economies throughout the state, according to fiscal year 2007-2008 data. More than $70 million was contributed to general revenues in the form of state sales taxes, and 20,100 jobs were generated as a result of the state parks' operations.

Fishing and hunting accounted for an industry of more than $8 billion in 2006 and helped support almost 85,300 jobs. This industry requires healthy freshwater, forest and marine ecosystems.

"By investing in Florida Forever and ensuring that our ecosystems remain healthy and functioning, Florida's policy makers can ensure that future generations inherit the 'life support systems' that are the foundation of Florida's quality of life and economic prosperity," said Jeff Danter, The Nature Conservancy's Florida director.

The report also finds that:

Florida's agriculture industry is tied to protected natural resources and provides economic, cultural, recreational and ecological benefits. In 2006, the state's forest products and ranching industries accounted for a $9.8 billion economic impact and supported a minimum of 195,000 jobs.

Conservation that helps to buffer military facilities in Florida allows for continued national security training while helping preserve Florida's natural communities and threatened and endangered species. Military land in Florida must be buffered to avoid encroaching development and to prevent future closures of base missions in Florida.

"These findings – and the dependence of many of Florida's key industries on healthy natural resources – make clear the importance of Florida's focus on its investment in land conservation. The support of taxpayers, businesses, legislators and governors for Florida Forever, and Preservation 2000 before it, has yielded real and sustainable economic benefits," the report states.

Florida faces increased drought, increased concern for wildfires

Most of Florida is now "abnormally dry" and rainfall predictions are below normal through June, a combination of conditions that has heightened concern for wildfires among state fire and natural resource officials.

"While we were able to do a record number of controlled burns last year, which are low-impact fires that burn up fuels but allow animals to survive, there is still a lot of fuel-heavy habitat statewide that is a concern given these weather conditions," said Zach Prusak, Florida state fire manager for The Nature Conservancy.

Intense wildfires can devastate communities and wildlife, as seen recently in Australia. Florida's landscape is prone to fires and much of the state's plants and animals are adapted to regular fire as part of the natural cycle of life. State agencies and conservation groups use controlled burns to reduce excess woody debris and reduce the intensity of wildfires.

Homeowners can make sure their properties are prepared for wildfires. One way they can prepare is by using Firewise principles on their property. This is a type of construction that keeps in mind fire in the landscape.

Those features include:

- Roof, siding, soffits, eaves and gutters made of nonflammable, noncombustible materials.
- All windows made of tempered glass that won't crack under heat and pressure of a nearby fire.
- A 30-foot wide space around the center that is kept free of dense vegetation.
- Landscaping with less flammable native plants.

For more information on Firewise principles visit firewise.org or for tips on how to prepare your family for wildfires log on to nature.org/tigercreek to download a fact sheet.

News & **Notes**

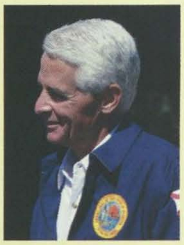
Governor Crist receives National Wildlife Federation conservation award

Gov. Charlie Crist received the National Wildlife Federation's "Conservation Achievement Award for Government," in recognition of his work to position Florida as a leader in addressing climate change and protecting the environment.

"We must take action in our lifetime to protect Florida's treasures - from the Everglades and the white-sand beaches to the crystal clear springs - so that future generations can experience the Florida we love," Crist said. "I am honored to be an advocate for Florida's environment, and I am committed to continuing the work we have done over the past two years to keep the Sunshine State beautiful."

The award recognizes Crist for his leadership in environmental conservation, including his role in encouraging the South Florida Water Management District's recent approval of the historic land purchase deal, in which the district will buy 180,000 acres of land to clean, store and move water going into Everglades National Park. NWF leaders also lauded Crist's commitment to reducing Florida's greenhouse gases and increasing energy efficiency.

"With political courage and unmatched resolve, Gov. Crist has single-handedly positioned Florida as a leader in the fight against global warming," said Larry Schweiger, President and CEO of the National Wildlife Federation. "It is an honor to recognize him with NWF's Conservation Achievement Award for Government."



TIM DONOVAN

Crist has made addressing climate change and preserving Florida's natural resources a priority since taking office. He announced the goal to purchase the Everglades land during the 2008 Serve to Preserve Florida Summit on Global Climate Change in Miami. The Everglades land acquisition represents one of the largest environmental land acquisitions in the nation's history.

In October 2008, Audubon of Florida, a member organization of the Everglades Coalition, presented Crist with the "Champion of the Everglades" award for his leadership in encouraging the South Florida Water Management District to pursue negotiations for the land acquisition.

Crist endorsed Amendment 4, which passed in November 2008, lowering property taxes for landowners who put property into conservation. He also helped conserve 11,000 acres in the Florida Panhandle through a $1 million grant to The Nature Conservancy. He also endorsed the long-term, $625-million plan to restore and protect water quality in the Lower St. Johns River. Crist also has advocated for the protection of manatees and against the exportation and exploitation of freshwater turtles.

Primates, other potentially dangerous animals, don't make good pets

A violent attack on a woman in Connecticut by a 200-pound pet chimpanzee has sparked renewed nationwide debate about exotic animals as pets.

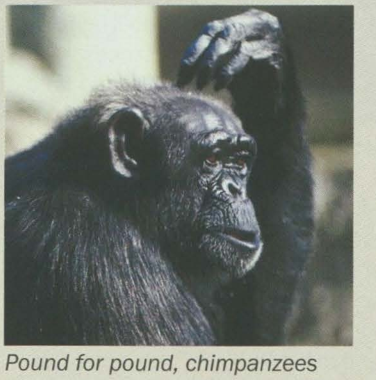
The Feb. 16 attack left a 55-year-old woman in critical condition with "life-altering" injuries to her face and hands.

The case is a sobering reminder that no matter how well the owner treats, or bonds with, a Class I (potentially very dangerous) animal, its instincts will take over at some point, and it will behave like the wild animal it is, and it can pose a threat to people.

The FWC, which licenses and monitors ownership of exotic species, reminds people to be cautious around wild animals and to do their homework regarding state regulations, here and elsewhere.

People can go to the FWC's Web site, MyFWC.com, and click on "Ask FWC" to learn more about regulations governing Class I animals and other captive wildlife. Those who live in the same neighborhoods as captive chimpanzees, lions or other potentially dangerous animals should make sure the owners' permits are in order.

Florida banned possession of primates as pets in 1980. Florida authorities recognized the need for the prohibition after a series of attacks here during the 1970s. However, there are still many exotic pets in this state, particularly in Southwest Florida. A handful of people who owned Class I animals before the law took effect still have permits for their pet chimpanzees, tigers, lions and others. As the pets die, the state revokes the licenses to possess such animals.



FILE PHOTO

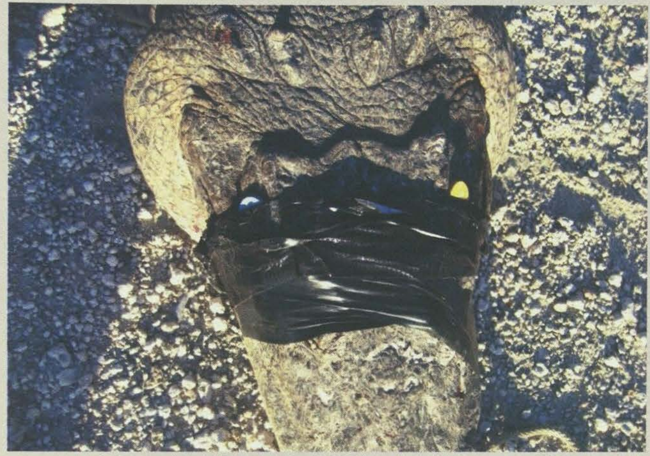
Pound for pound, chimpanzees are much stronger than humans - male chimps have been measured to have five times the arm strength of a man.

Nineteen other states and the District of Columbia have similar laws on the books, but efforts to pass a federal law, in the wake of two chimps mauling a California man, have stalled since 2005.

Sanctuaries in Florida are allowed to have primates. A monkey given up by a Minnesota owner and transferred to a Gainesville facility had attacked the woman's two daughters. She described the monkeys as "unpredictable" and said they have attitude problems. That's a typical reaction of individuals who took in such pets without a thorough understanding of the animals' needs or the instincts that drive them.

Meanwhile, people across the country should think twice about whether they want to share space with a chimpanzee or other animal that is quite capable of injuring or killing a human being.

Biologists use magnets to keep nuisance crocodiles away


GABRIELLA B. FERRARO

***Above:** A captured crocodile has magnets taped to its head before translocation to another site. **Below:** A bit of tape remains after the magnets are removed at the release site.*

Magnets usually attract, but the FWC wants magnets to do just the opposite. FWC biologists are studying if magnets can keep state-endangered American crocodiles from returning to situations where they are not welcome, primarily in neighborhoods in Miami-Dade and Monroe counties.

Crocodile-human interactions have increased as the crocodile population has recovered. One technique to resolve these conflicts is translocation. This involves capturing the crocodile and moving it to suitable crocodile habitat as far away as possible, in an attempt to keep it away from an area. However, translocation is seldom effective. FWC biologists have found that translocated crocodiles will travel an average of 10 miles per week to return to their capture site, in a practice called "homing." Others never make it because they are hit and killed by vehicles as they cross roads. Some may be killed by other crocodiles at the release site or during their journey back.

In an effort to break the homing cycle, FWC biologists have initiated a new study. Crocodile agents have been instructed to attach magnets to both sides of the crocodile's head at the capture site. It is hoped the magnets will disorient the crocodiles and disrupt their navigation, so they can't find their way back to the capture site. The magnets are removed from the crocodile's head upon release. Agents will also secure a colored tag to the crocodile's tail, so returning crocodiles can be identified later.

"Scientists in Mexico have reported success in using magnets to break the homing cycle," said Lindsey Hord, FWC crocodile response coordinator. "The results of the study are promising. If it proves successful here, we could gain an effective technique to resolve crocodile-human conflicts."

If a nuisance crocodile continues to return to the capture site, or its behavior presents an unacceptable risk to people, under certain circumstances, it could be removed from the wild and placed in captivity.

You should never approach a crocodile, and if you see one that concerns you, call the FWC's Statewide Nuisance Alligator Hotline at 866-FWC-GATOR (866-392-4286) to report the animal. To learn more about the American crocodile in Florida, visit MyFWC.com/crocodile.

GABRIELLA B. FERRARO

Derelict vessels being cleared from waterways

Officers with the FWC are assisting in the removal of derelict vessels from Collier County waterways. The clean-up is made possible because of an $80,000 grant the FWC awarded to the Collier County Coastal Zone Management Department.

Beginning in March, FWC officers were on hand as contractors removed abandoned, derelict vessels from the water. In the past year, the FWC and its law enforcement partners, including the Collier County Sheriff's Office, the Marco Island Police Department and the Naples Police Department, have worked diligently to track down the owners of these derelict vessels, and some are facing criminal charges. The FWC continues to pursue violators.

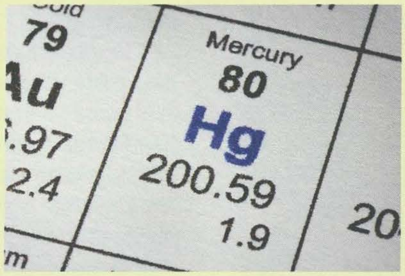
"It's important to get these vessels out of the water now, before the upcoming hurricane season," said FWC Lt. Mitts Mravic.

Over the course of several weeks, 12 vessels were removed from the water, including a 70-foot sailing vessel that sank in the Marco River in 2007.

GABRIELLA B. FERRARO

News & **Notes**

To climate-change worries, add one more: extended mercury threat



Mercury pollution has already spurred public health officials to advise eating less fish, but it could become a more pressing concern in a warmer world.

Sue Natali, a postdoctoral associate in botany at the University of Florida, compared mercury levels in soils under trees growing in air enriched with carbon dioxide with soil beneath trees in ambient air. Carbon dioxide, the main greenhouse gas, has increased nearly 40 percent since the industrial revolution and is expected to continue climbing unless power plant and other emissions are restricted or curtailed.

Natali's main finding: Soil samples from the carbon dioxide-enriched soil contained almost 30 percent more mercury – apparently because the soil had greater capacity than soil in today's atmosphere to trap and hold on to mercury.

On the one hand, Natali said, that increased capacity could slow the mercury's release into water – its main conduit to aquatic wildlife and the fish that pose a hazard to people. However, it means that even if policy makers manage to ban or severely restrict mercury emissions, the metal will remain a source of pollution for a long time.

Global mercury emissions today range from 4,400 to 7,500 tons per year, according to the Environmental Protection Agency. Natural sources such as volcanoes account for about half, with coal-fired power plants, smelters and incinerators contributing the remainder.

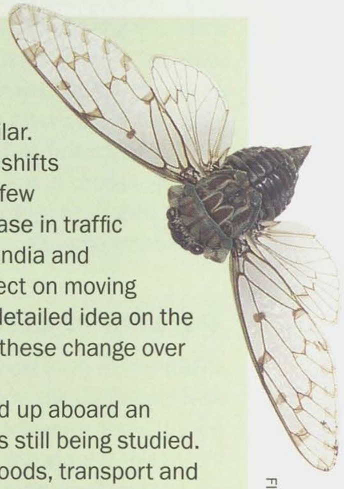
When mercury is belched into the air, it returns to Earth via rain, with bacteria and other natural processes converting it to methylmercury in lakes, rivers and oceans. Methylmercury builds up through the food chain, with the flesh of the biggest, most sought-after predator fish – tuna, swordfish, king mackerel and so on – containing the highest concentrations. That's why the federal government has advised women who are pregnant, children and other people considered vulnerable to limit their consumption.

Natali said scientists have long recognized the fact that mercury levels in soil spike under trees, averaging four times the concentration found in open areas.

That's because trees effectively scavenge the poison from the atmosphere. Leaves and stems collect rainwater, and with it mercury; trees drop mercury-laden leaves on the ground, and trees take in the metal through their stomata, or breathing pores, on leaves.

Scientists also have shown that increased atmospheric carbon dioxide leads to increased plant and tree growth.

Study predicts when invasive species can travel more readily by air



FILE PHOTO

Global airlines be forewarned: June 2010 could be a busy month for invasive plants, insects and animals seeking free rides to distant lands.

A new study forecasts when climate factors such as temperature, humidity and rainfall will match at geographically distant airline departure and destination points, which could help to shuffle invasive species, and the diseases they may carry, across the globe along existing flight routes. The findings provide a framework that could help people who monitor airline flights – and the people, baggage and cargo aboard – to plan more efficiently and accurately for detecting and intercepting invasives.

Andy Tatem, who holds a joint position at the Emerging Pathogens Institute and the University of Florida's geography department, said his model uses the latest forecast data for climate change and air traffic volumes.

"The problem is that as the global transport networks expand, we're getting more and more invasive species and pathogens coming from different parts of the world that have survived isolated for thousands of years," said Tatem. "But now they have this high-speed link going between different regions of the world."

Tatem predicts a peak risk will be reached in June 2010, when multiple factors converge to create a month when the climate factors at many flight origin and destination airports would be most similar.

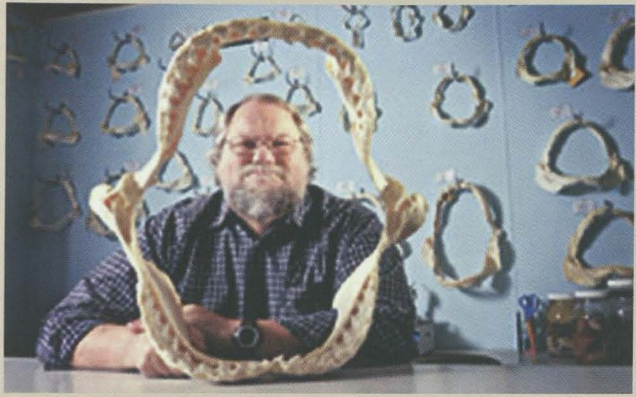
"The model shows us that climatic shifts are not greatly significant over the next few years," Tatem said. "But the great increase in traffic volumes from expanding economies in India and China are likely to have a significant effect on moving species. This gives us much more of a detailed idea on the importance of key risk factors and how these change over time."

But exactly how native species wind up aboard an outbound passenger or freight aircraft is still being studied. Tatem said it can be a combination of goods, transport and people bringing things aboard either accidentally or knowingly.

"Some studies have shown that mosquitoes can fly on randomly, or they may get into baggage," he said. "But some things, like plant pathogens, happen when people purposely bring fruit aboard, or they may bring in a plant that makes it through inspections, or they may just have seeds stuck in the soles of their shoes."

Unfortunately, he said, unwitting air passengers have too frequently provided transport of plant pests and human diseases and this trend has increased with elevated intercontinental passenger traffic.

Shark attacks decline worldwide in midst of economic recession



UNIVERSITY OF FLORIDA

George Burgess, director of the International Shark Attack File at the University of Florida, looks through a shark's jaws. Shark attacks worldwide in 2008 dipped to their lowest level in five years.

The recession may be responsible for a slump of a different sort: an unexpected dive in shark attacks, says a University of Florida researcher.

Shark attacks worldwide in 2008 dipped to their lowest level in five years, a sign that Americans may be forgoing vacation trips to the beach, said George Burgess, ichthyologist and director of the International Shark Attack File, housed at UF in Gainesville.

According to the latest statistics, the total number of shark attacks declined from 71 in 2007 to 59 in 2008, the fewest since 2003, when there were 57, said Burgess.

"I can't help but think that contributing to that reduction may have been the reticence of some people to take holidays and go to the beach for economic reasons," Burgess said. "We noticed similar declines during the recession that followed the events of 2001, despite the fact that human populations continued to rise."

The number of shark attacks in the United States, which typically makes up about two-thirds of the total worldwide, dropped from 50 in 2007 to 41 in 2008, Burgess said. Thirty-two of those attacks were in Florida – the same number as the previous year.

Florida, with its warm waters, has more sharks, including black tip sharks and spinner sharks, species not found in lower temperatures, Burgess said.

Within Florida, Volusia County continued its dubious distinction as the world's shark bite capital, with 22 incidents, its highest yearly total since 2001.

As in past years, surfers accounted for most of the world's attacks – 57 percent – followed by swimmers and waders, 36 percent; and divers, 8 percent. These numbers are rounded up, which is why they total more than 100 percent.

"Surfers are the heavy favorites, largely because the splashing of arms and particularly the kicking of feet at the water's surface where visibility is poor is provocative to sharks," Burgess said. "They result in what we think are cases of mistaken identity, where the shark interprets the irregular splashing to be activities of its normal prey."

As a group, surfers seem to accept the risks of pursuing a sport in the ocean, he said.

"I've yet to find a surfer who says he or she won't go back into the water after a bite or a nip," he said. 'Some of them may be looking over their shoulders a little bit more than they did before, but the reality is they understand where humans fall in the grand order of things."

Over the long term, though, Burgess expects shark attacks to rise because of a gradual upswing from one decade to the next. "We've already surpassed the numbers of attacks in the previous 10-year period," he said, "so we know this decade will be higher than the last."

Biologists rescue manatee from golf course pond

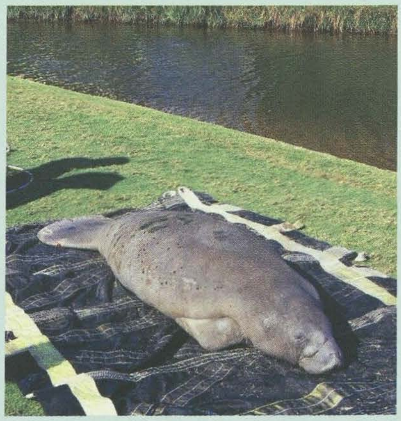
Biologists with the FWC's Fish and Wildlife Research Institute rescued an approximately 500-pound, 6-foot-long, juvenile male manatee on Feb. 13 from a pond in a private golf club in North Palm Beach. Staff from the Loggerhead Marinelife Center assisted in the rescue.

The manatee was able to access the pond by traveling through a culvert system. It had been in the pond for at least one day before it was rescued. The manatee showed signs of cold-stress and appeared thin.

Because of these health concerns, biologists and veterinarians determined the manatee should not be released, but instead, should be transported to Miami Seaquarium, which houses a manatee rehabilitation facility. Miami Seaquarium has successfully rehabilitated dozens of injured and ill manatees over the years.

"Out of caution, we felt we should take the manatee in for a check-up," said FWRI biologist Tom Reinert. "With rehabilitation and monitoring, we're giving this manatee the best chance for survival."

The goal is to return the manatee to the wild. For more information on manatee research, visit research.MyFWC.com/manatees.



GABRIELLA FERRARO

The manatee rescued from a golf course pond is prepared for transport to Miami Seaquarium's rehabilitation facility.

FWC's Division of Law Enforcement receives "seal of approval"

By Carol M. Pratt

Coveted state accreditation awarded to the division

Officer Seth Wagner (right) talks with Commission for Florida Law Enforcement Accreditation assessors as they inspect FWC law enforcement equipment.

TIM DONOVAN

If you've ever dealt with officers from the FWC then you were likely impressed with their degree of professionalism. The requirements to become a law enforcement officer with the agency are stringent. The very nature of their job requires them to be intelligent and self-sufficient.

When these qualities are tested, FWC's Division of Law Enforcement passes with flying colors. During the past two years, the agency completed a thorough assessment process, and in February the Division of Law Enforcement was officially accredited by the Commission for Florida Law Enforcement Accreditation.

The CFA is an independent reviewing authority for law enforcement agencies in Florida. The FWC's offices and officers, throughout Florida, were visited by CFA assessors.

"The community, the agency and the officer all benefit from accreditation and how it strengthens an agency," said Col. Julie Jones, director of the division. "Accreditation gives our citizens confidence in the policies and practices of the FWC and shows we believe in maintaining the highest standards of professionalism, as judged by our peers. Accreditation also ensures that FWC policies and procedures stress the importance of officer safety, provide for adequate training and equipment needs and are continually updated to reflect best management practices in law enforcement."

Altogether, there are more than 250 standards that the division must meet or exceed in order to become an accredited agency.

The CFA team conducted a comprehensive inspection where the assessors reviewed the division's policies and procedures for such topics as firing warning shots and training standards. The code of conduct was examined; even the officers' appearance was evaluated. Overall, the assessment team spent three days in Tallahassee, evaluating the division's general orders, equipment, procedures and employees.

Last December, the DLE gathered swamp buggies, ATVs, airboats and aircraft together in Tallahassee for the CFA assessors to look over. The assessors also interviewed the officers who were there.

Officer Seth Wagner, stationed in Carrabelle, met the team.

"They looked at my equipment and had questions about my training and questions on our general orders," Wagner said. "They asked me about our policy on contamination – for example, if someone I was transporting on my airboat was ill and possibly contagious, how I would control contamination."

If one were to think officers were resentful of being inspected by outsiders, that would not be the case. The officers were confident their division would measure up and they welcomed the opportunity to improve. Accreditation also gives the division professional recognition among their peers.

Canine Officer Mike Guy, assigned to Panama City Beach, also met the CFA team in Tallahassee.

"There are a lot of good things associated with accreditation," said Guy. "It really just shows the agency is willing to take us farther and that we have pride in what we do. It's a standard that's set for law enforcement and it demonstrates we are willing to do what it takes to excel in the field of law enforcement."

By becoming an accredited agency, the FWC's Division of Law Enforcement becomes the largest natural resource law enforcement agency in the nation to achieve this level of distinction, and joins an elite group of fish and wildlife enforcement agencies to have successfully completed the accreditation assessment process.

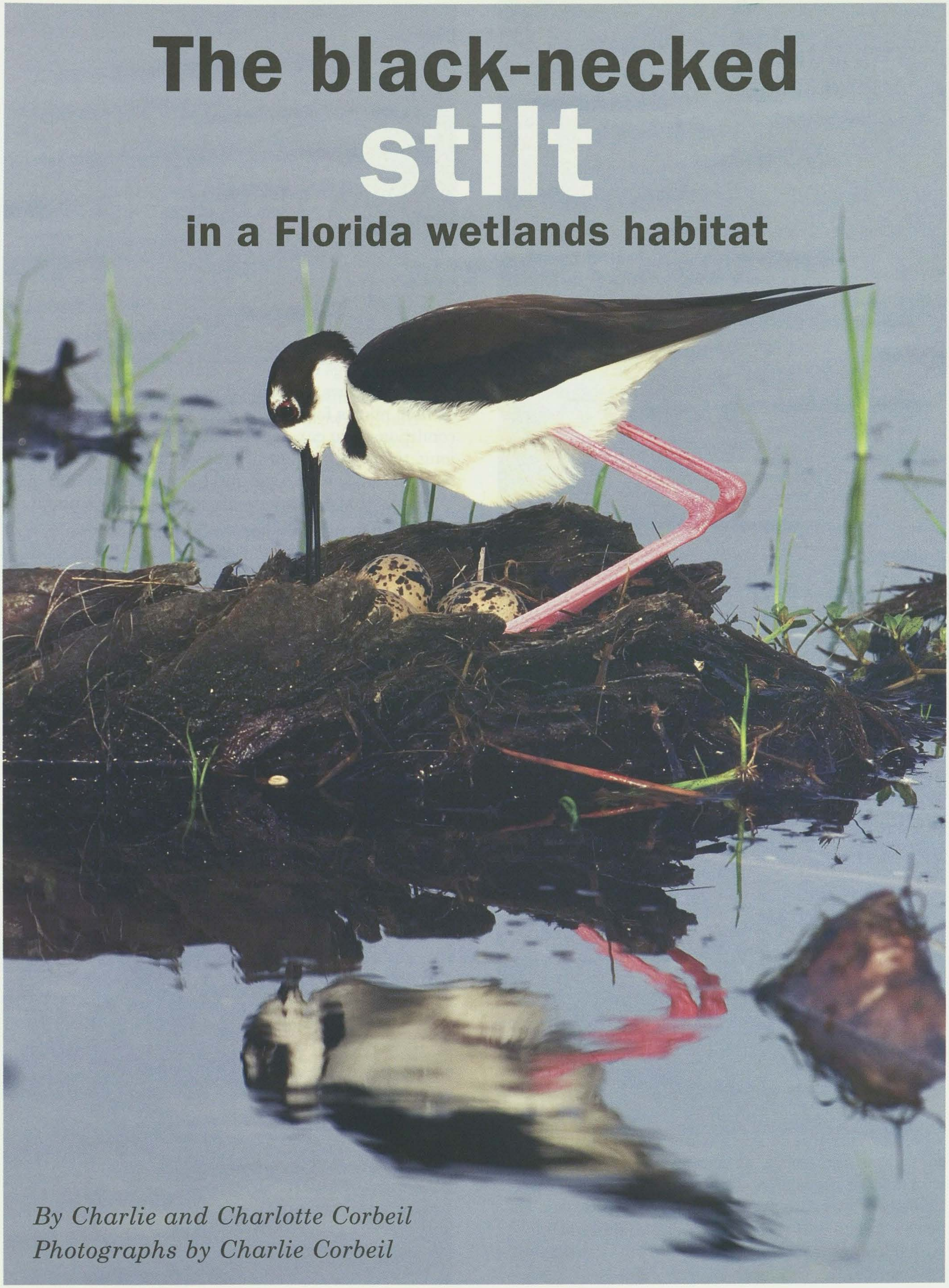
"We have a unique job and we present ourselves to a lot of people who still don't know who we are," Guy said. "We have always had a limited budget and that is not improving for us and a lot of other people. But that aside, we always strive to be very professional. Going through this accreditation process is a step forward in getting the acknowledgement and recognition we deserve and need – we have shined on a dark day."

Wagner agrees. "I think accreditation is very important. It helps me in my knowledge and ability to apply general orders to my everyday duties. It makes me a better officer and the division stellar."

To maintain accredited status, the division will continue to critically assess how its mission is being carried out and will be re-assessed by the CFA every three years. The division's mission is protecting Florida's natural resources and people through proactive and responsive law enforcement services.

"Accreditation is a coveted award that symbolizes professionalism, excellence and competence," Jones said. "We take pride knowing that in obtaining accreditation status we represent the very best in law enforcement. FW

The black-necked stilt in a Florida wetlands habitat



By Charlie and Charlotte Corbeil
Photographs by Charlie Corbeil

Early summer, the nuptial season for some birds, is an exhilarating and advantageous time for the avid birder and photographer at the Viera Wetlands in Brevard County. There, as daybreak brightens, the waking noises of birds intensify while the morning glow paints the water. Other creatures, such as frogs and alligators, blend their voices with the boisterous calls of the fowl to introduce a new day. An observer might occasionally watch a bobcat or deer prance nearby.

The territory captivated my interest after an initial visit with an Audubon group. Since I live nearby, I travel the area almost daily on foot or by car. Last June, at the break of dawn, energized by the cacophony of bird-mating calls, I encountered a black-necked stilt in the wetlands. By chance, I discovered its black, muddy nest in shallow water and decided to seize the opportunity to observe the birthing process of this species.

The habitat is ideal for the black-necked stilt, which prefers inland fresh water with marshy conditions and emergent vegetation. Even though it is nestled between a spacious cattle ranch, sod fields and spreading new housing developments, the area attracts many animal species and plant life which are increasingly adapting to this unlikely environment.

The wetlands were constructed in 2000 to provide a polishing treatment to the wastewater from the county's sanitary sewer plant, making it suitable for irrigation. They were renamed the Ritch Grissom Memorial Wetlands at Viera in 2007. Over the years, the location became a sanctuary for wildlife, birders, nature photographers, naturalists and sightseers in cars, on bikes or on foot. Consequently, in 2008, the wetlands were added to the Great Florida Birding Trail, welcoming multitudes of new visitors.

At home in this locality, the black-necked stilt (*Himantopus mexicanus*) is a striking black and white bird. Its call, loud and sharp with incessant yipping, can be aggravating to anyone spending extended periods in its presence. Its shiny black back and wings contrast with its white breast. White eyebrows, embedded in a black cap, serve as field marks for the observer. In ideal lighting conditions, you can see this bird has red irises. Its long, thin black bill is slightly upturned. Walking on thin red or pink legs, and seemingly dressed in a tuxedo, this delicate creature is another sample of nature's art.

The black-necked stilt feeds by picking or pecking at prey items, invertebrates, crustaceans and insects. Its normal diet includes worms, mollusks, shrimp, small fish, tadpoles and sometimes floating seeds of aquatic plants. It forages visually by wading through the water and picking prey from or near the water's surface.

In general, this bird intrigues me because of its physical beauty, mating rituals, fastidious nesting habits and its exacting care of the young. During the mating season, when the adults are displaying their nuptial colors and preparing for their chicks, I tend to scrutinize any pair feathering their nests.

When I discovered a black-neck stilt nest, I saw four subelliptical eggs with a pale brownish-buff background, blotched with a scattering of black and brown markings. The nest was made of mud, mixed with grasses, sticks, leaves and some shell. It was constructed in about 2 to 3 inches of water in a mound that was above the water level by a few inches. If rising water threatens a nest, the mating pair quickly adds material to raise it above the water level.

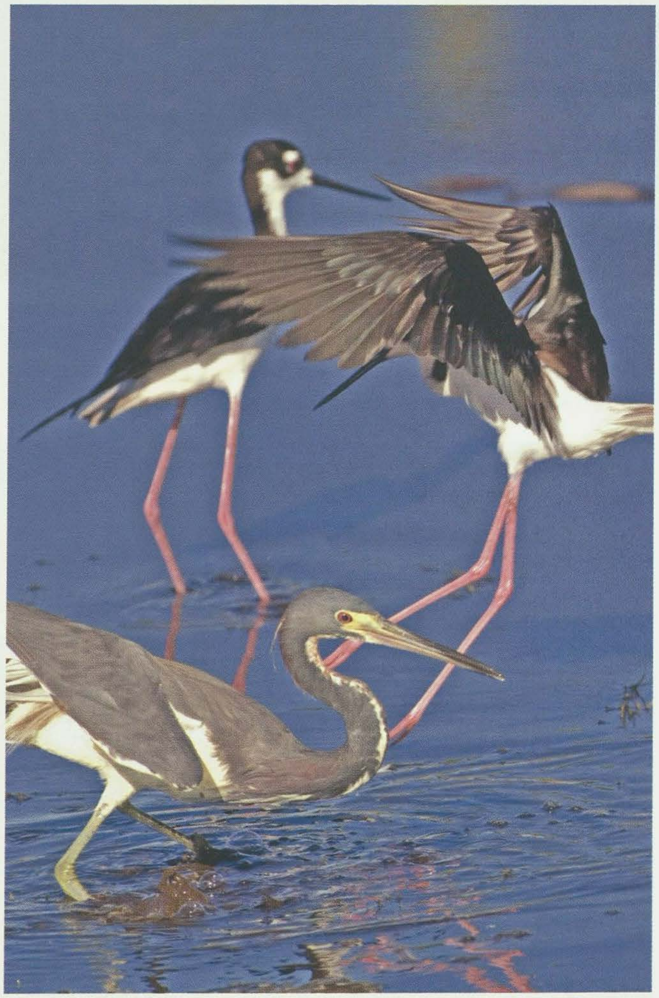
After watching the nest for a few days (incubation is 19 to 26 days and all the eggs hatch within one to two days of each other), I saw the first chick already hatched. It stood next to the adult female while the adult male moved around the area to ensure safety. Soon, a tricolored heron feeding nearby wandered too close to the nest and was attacked by the adult male. The adult female left the nest to help in the attack. The tricolored heron, bewildered, quickly withdrew to the shoreline, bristling from the excitement.

With ideal lighting and my camera ready, I witnessed the birth of the second chick. Using a 500mm zoom lens, I stayed at a guarded distance. I observed the egg open and expose a chick. An hour later, it emerged. Once the chick was completely hatched, the mother removed the shell from the nest and deposited it in the water. (The other two eggs failed to hatch and disappeared.)

While the mother tended to housekeeping, the first chick made its initial journey from the nest. It combed the mud and shallow water and fed without parental assistance. Not wandering far from the nest, it quickly returned to the warmth of its mother. Meanwhile, the second chick was in the drying-off stage under the mother's wing. The chicks are precocial (capable of a high degree of independent activity from birth). Covered with down when hatched, they generally leave the nest within one to two hours of birth. It was not long before the newborn roamed from the nest to join its sibling in search of food.

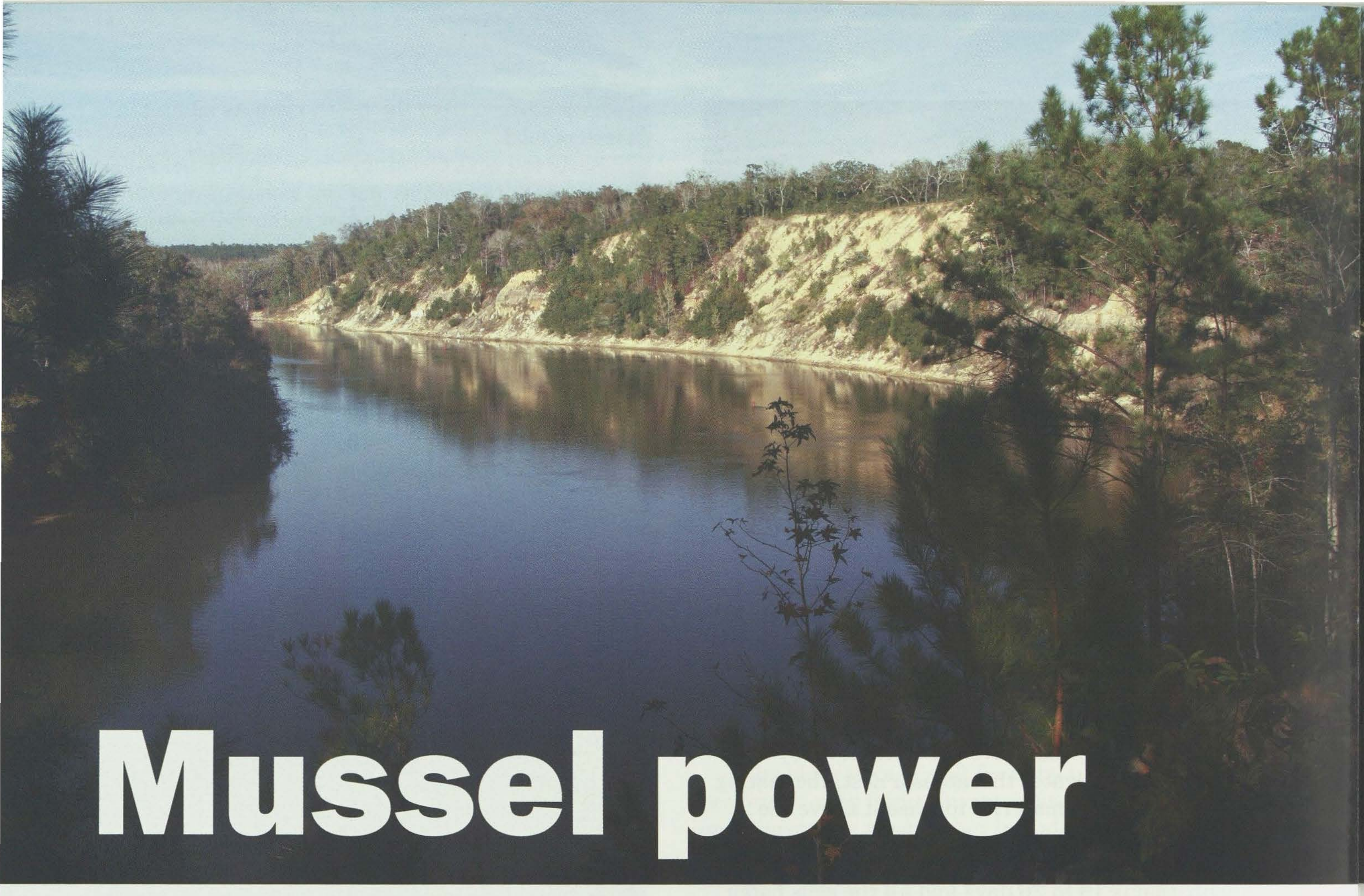
Early the next morning, I found both chicks off the nest with the mother nearby. Soon, the adult pair provided brooding in a few inches of water. Later, the chicks learned to swim in deeper water, where they would eventually hide at night from predators. The adults yipped their warnings about predators, such as alligators, hawks and eagles, and remained close. Eventually, the chicks followed the mother back to the nest to dry off and warm up. A heavy rain that night practically flooded the nest, forcing the birds to evacuate.

Obviously, the adults provide care, but the chicks feed themselves and fly in 28 to 55 days. Family groups have been known to remain together past the time when the young can fly. Hopefully, these chicks and others will return from migration and repeat the cycle. FW



***Facing page, top:** The first-born chick is ready to leave the nest just hours after its birth. **Bottom:** The second chick is still drying off after hatching an hour ago. **This page, top:** Both chicks swim near the nest. **Above:** A tricolored heron ventures too close to the nest and is confronted by the stilt parents.*

Mussel power



Article and photographs by Doug Alderson

The sculptured surface of a fat threeridge mussel, with its many grooves and ridges, resembles a raised topographic map. And to an expert like Jerry Ziewitz, this unique shell pattern points to a 10-mile stretch of North Florida's Apalachicola River and 13 miles of the adjoining Chipola River, where the world's largest concentration of these endangered mussels thrive along the sand banks.

Having Jerry as my guide, on a cloudy fall day, gave me an unexpected appreciation of these humble creatures that spend their lives filtering microscopic morsels from the water. Jerry works as a biologist for the U.S. Fish and Wildlife Service, and his job is to help document and protect threatened and endangered mussels along the river. And he has a passion for it.

"They don't have a face and they're not cute and cuddly," he said as we readied his skiff for launching near Wewahitchka. "But they do have a foot, only one – that's what they locomote with. It looks like a very pale tongue. That's how they burrow."

During our boat journey downriver, Jerry rarely passed up an opportunity to continue lessons in musselology 101. "The more you learn about them, the more fascinating they are," he said.

For example, Jerry pointed out that the larval stage of these 4-inch river mussels is very different than that of saltwater mussels, oysters or clams, which broadcast their larval young into the open water. The female fat threeridge mussel sends out a web-like mass that sticks to passing fish, enabling the larval mussels, called glochidia, to

"Mussels don't have a face and they're not cute and cuddly. But they do have a foot, only one – that's what they locomote with. It looks like a very pale tongue. That's how they burrow."

Jerry Ziewitz

attach to the gills or fins of the unsuspecting host fish. The tiny parasitic glochidia feed on the blood serum of the fish for 10 to 14 days or more before they drop to the river bottom. Most of the young mussels die in the first year, but the ones that do reach adulthood are generally long-lived, some species surviving for 100 years or more.

If the larval mussels didn't hitch rides on fish, they could disperse only in a downstream direction with the current. The host fish are not noticeably harmed in the process, but they eventually develop an immunity that prevents mussel larvae from clamping on a second or third time.

For our first stop, Jerry took me to a mostly dried up side channel known as Swift Slough. We climbed over logs and tromped along the sandy bottom, finding several dead mussel shells.

"I first came here in the summer of 2000 and found 17 fat threeridge mussels in this slough after several hours of searching with several other biologists. In the summer of 2006, there were thousands," Jerry said.

During high water events, water rushes through Swift Slough to a tributary known as the River Styx. Jerry believes that high flows associated with Hurricane Dennis in the summer of 2005 moved a large amount of sand and, with it, a large number of mussels into Swift Slough. Having filled in with about a foot of sand, Swift Slough became disconnected from the main channel during a period of low flows in 2006, leaving the newly-arrived mussels without vital flowing water.

"We once had so many yellow flags marking the locations of endangered mussels in here that it looked like a Chinese New Year's celebration," he said. "But most of them perished. They need flowing water, and this has become an intermittently flowing stream. They mostly move up and down, not laterally, so they were trapped."

Jerry pointed out that water would have to flow in the Apalachicola River at a minimum rate of about 6,000 cubic feet per second or more to keep mussels in Swift Slough alive. Cubic feet per second is a standard method to measure the rate of water flow in rivers across the United States. But the United States Army Corps of Engineers, which manages dams on the river system that begin with Lake Seminole near the Georgia border and extend northward to a series of dams and reservoirs on the Chattahoochee and Flint rivers in Georgia and Alabama, could not maintain such a flow level. The demands for upstream water from farms, power plants and cities such as Atlanta are too great, and the average rate of flow in the Apalachicola River has been dropping for decades.

The minimum flow level that the Corps seeks to maintain is 5,000 cfs, a benchmark established long before three different mussels were declared threatened or endangered in the Apalachicola-Chattahoochee-Flint River Basin in 1998. Still, because mussels such as the fat threeridge receive federal protection, they are caught up in a tri-state water war that has raged for several years with no end in sight. Upriver politicians have styled the debate as "people versus mussels." A prime example is a quote by United States Congressman John Linder in the Wall Street Journal. Linder represents several fast-growing counties near Atlanta. He said the Corps "behaves as though mussels are more important than our children and grandchildren."

"It's easy to pick on mussels," concludes Jerry.

In reality, power plants, such as a coal-fired generating station at Sneads in North Florida and Dothan's Farley nuclear plant, also need at least 5,000 cfs of water for cooling purposes. Then there are the oyster beds of Apalachicola Bay. They need a minimum amount of fresh

***Above:** Using a small dredge, a research team searches for rare mussels in the Apalachicola River. **Facing page:** In addition to mussels, the Apalachicola River Basin harbors many other rare and endangered species – a major reason The Nature Conservancy designated North Florida as one of six regions in the United States having the highest levels of biodiversity. This photo was taken at Alum Bluff just above Bristol.*

Above: Biologist Jerry Ziewitz stands in a slough area along the Apalachicola River. The endangered mussels were once plentiful before the area began drying up due to low water levels. *Below:* Ziewitz probes for endangered fat threeridge mussels in the Apalachicola River.

water along with periodic pulses of high water volumes coming down the river. More than 90 percent of the oysters produced in Florida come from that productive estuary.

Low water levels in the river mean there are higher salinity levels in Apalachicola Bay. That opens the way for marine predators such as the oyster drill to come in and begin wiping out oyster beds, causing economic hardship in commercial fishing towns such as Apalachicola and Eastpoint. Apalachicola has filed lawsuits to keep more water flowing in the river, and many in Florida see endangered mussels as one more weapon in their arsenal to guarantee minimum flows. In the meantime, demand for fresh water in the Atlanta area continues to grow, and the Chattahoochee River is its main water source.

Farmers in the tri-rivers basin also use a tremendous amount of water, especially since center pivot irrigation systems were installed in the 1970s and 80s. Prolonged droughts, such as in the late 1990s and in 2006 and 2007, exacerbate the problem.

"It's a lot like the Everglades," said Jerry, "competition for scarce water."

If water drops too low in the river, say, to 3,150 cfs, recent studies estimate that 84 percent of the endangered fat threeridge mussels would be high and dry, and they would likely die if the condition persisted for more than a few days.

"That kind of event could send these guys over the edge to extinction," Jerry said.

Two other protected mussels in the river also would be impacted: the Chipola slabshell and the purple bankclimber.

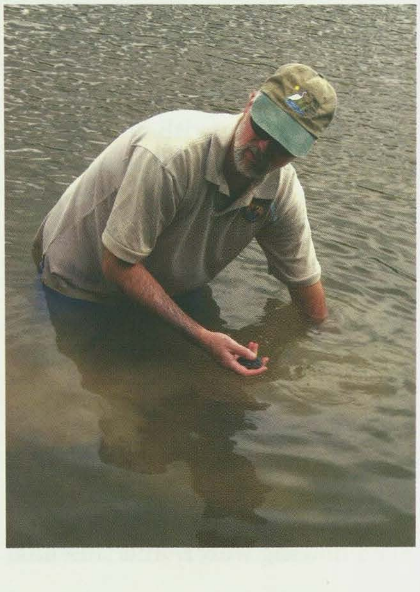
Although a minimum flow of 5,000 cfs in the river keeps most of the mussels wet and the power plants working, periodic high flows that spread out through the wide floodplain also are necessary. These flood events draw organic nutrients from the floodplain to help feed the food chain, especially in Apalachicola Bay. Traditionally, the Apalachicola River's flood stage is in late February and March, but factors such as climate change and upriver water use have been affecting the natural pulse cycles of the river.

Jerry motioned for us to board the boat again to find some live mussels along the river. In recent years, he has found sites that support tens of thousands more fat threeridge mussels than previously suspected because he figured out their favored habitat.

"They are usually on the side of the river that is not eroding and is receiving some sand and silt deposits, but not huge amounts, like you get on the major sandbars," he said. "These places are almost always marked by young willow trees."

He took me to one such site. A group of five researchers led by Dr. Mike Gangloff of Auburn were using a small dredge to capture mussels in scientific transects so a more accurate count of threatened and endangered mussels can be determined. In this spot, most of what was showing up in the nets at the end of the dredge pipe were small clams of Asiatic origin known as Corbicula. These exotic species now number in the millions along the river system, although it is not known how much they might be harming native mussels.

"Let's go where I know we'll find lots of fat threeridge," Jerry suggested. As we motored upriver, he pointed out the stretches of willow that marked shores that harbored mussels. "Once I recognized the habitat



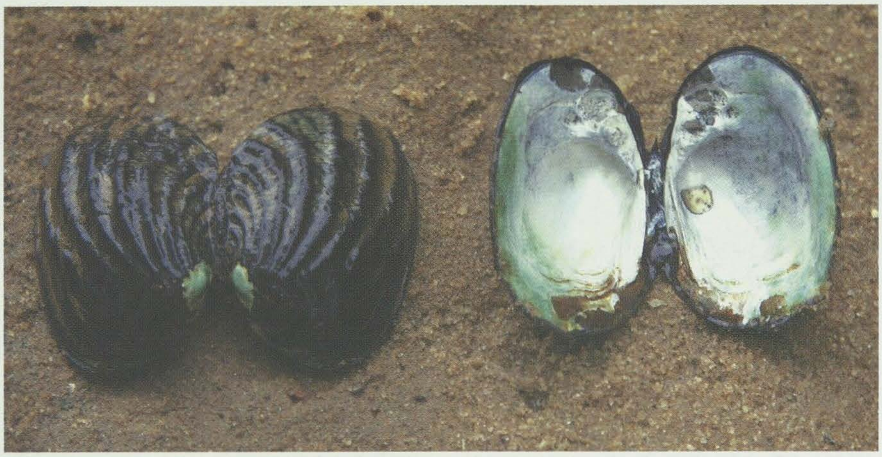
for them, our known sites went from about 12 10 years ago, to about 160," he said. "To find them is like an Easter egg hunt. They're not everywhere. Their distribution is highly clumped. It's really fun to find those sweet spots and see what's in them, and their life history is so fascinating."

After rounding several bends of the wide tree-lined river, we stopped beside a grove of willows and walked along the shore. Looking into the water, Jerry showed me what to look for in the soft downward-sloping bottom. A light-colored area of sand often revealed an almost imperceptible top of a mussel where they were siphoning water. He reached down, dug for a second, and gently pulled up a gleaming fat threeridge mussel. Then, he pulled up several more in the same area, along with a more common and impressively large 8-inch specimen known as a round washboard mussel.

As I joined in the search, it was a bit like an Easter egg hunt. I also felt like a Native American hunter-gatherer since those first Americans once harvested mussels for food. Even though the meat is highly chewy, it was an easy protein source. Plus, the attractive shells were often used for jewelry, utensils and as a trade item. But Jerry and I didn't keep our mussel finds. He showed me the proper way to reposition a mussel in the sand so it can continue filtering algae, plankton and silts from the water. A healthy mussel population can help clean a water body.

"When you have a species endemic to one system like these mussels," Jerry said, "it makes them vulnerable to catastrophic events such as severe drought, chemical spills or untimely high flow events like hurricanes."

Plus, as Jerry pointed out, anglers along the river use mussels for bait. The Florida Fish and Wildlife Conservation Commission has developed a brochure to help anglers identify listed, unlisted and invasive freshwater and estuarine mussel species. It can be found online at: research.myfwc.com/products/product_info.asp?id=4723?



Outer and inner shells of endangered fat threeridge mussels.

The FWC also is helping with a book, *The Freshwater Mussels of Florida*. Employees are conducting a statewide field survey to determine the species, composition and distribution of Florida fauna. FWC and University of Florida staff are working in streams, lakes and ponds in all of the state's major watersheds.

Freshwater mussels in general are among the most endangered animals on the planet. While the United States has the world's largest variety of freshwater mussels at 300 species, an estimated 70 percent are either extinct, endangered or in need of special protection. Three species already have been declared extinct in the Apalachicola River region alone.

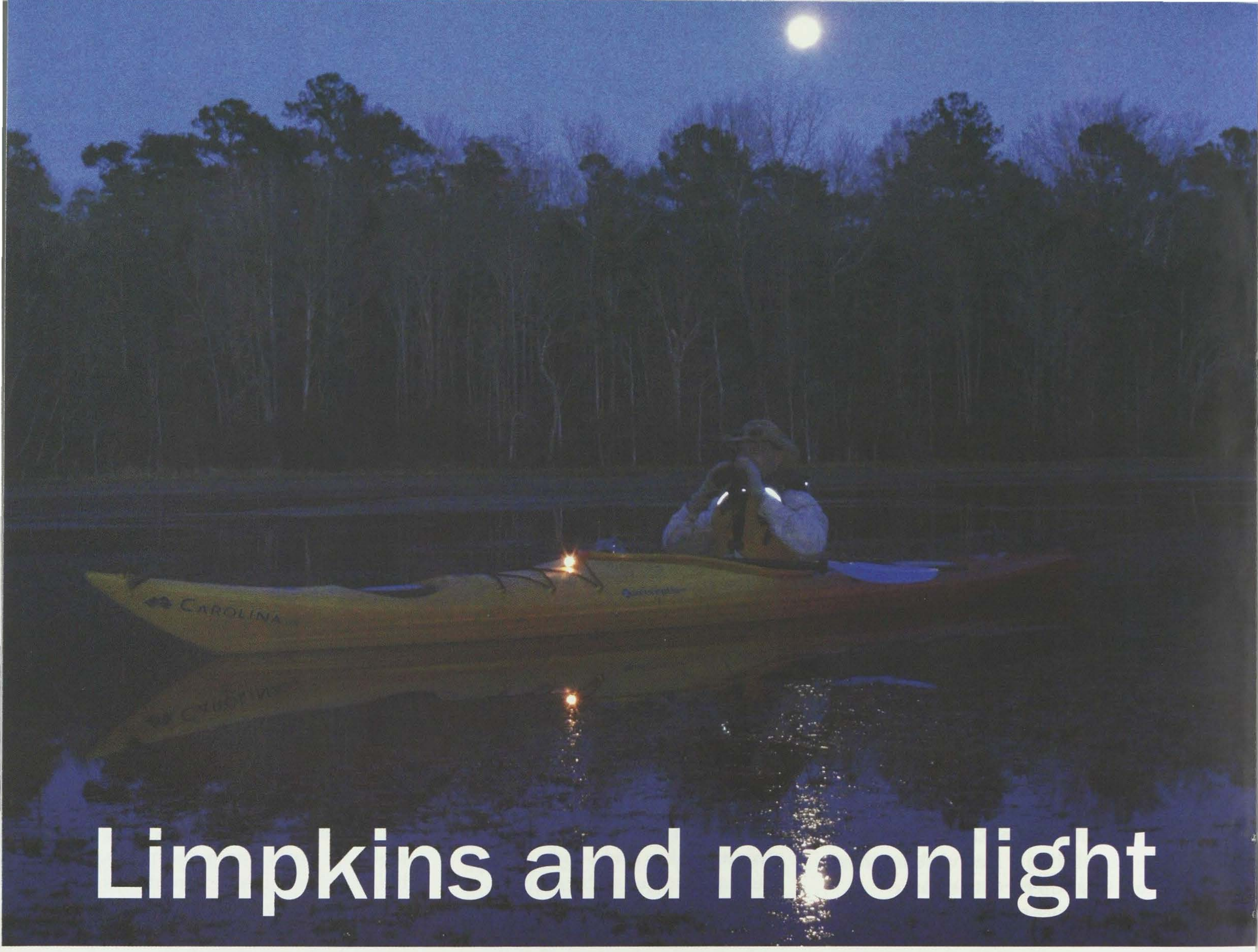
Threats to mussels are many. They include toxic runoff that may contain fertilizers, herbicides, pesticides and other chemical contaminants, sedimentation, dredging, channelization, dams, sand and gravel mining, and the clearing of shoreline vegetation. Other threats include competition from exotic mussels, a decline in fish species that act as hosts for mussel larvae and unregulated or illegal mussel harvesting. Since mussels are sensitive to declines in the biological environment, they have been described as barometers of environmental quality – the water version of canaries in the coal mine – portending threats to other species and entire ecosystems.

Mussels have other important uses. Besides filtering water and eliciting gasps of appreciation from rare human admirers, they contribute to the riverine food chain by providing meals for birds, raccoons, otters, fish, turtles and other creatures. They have thrived in the world's fresh water for about 400 million years. And even though they don't have the charisma of a panther or manatee, they are fascinating in their own right and are deserving of protection.

It's time the lowly mussel gets a little respect. FW

Doug Alderson is the author of four books and numerous magazine articles. To learn more about his work, visit www.dougalderson.net.

The Florida Mussel Rule was enacted to protect freshwater mussels from overharvest. It prohibits harvest for commercial purposes and/or resale and establishes daily bag limits (10) and possession limits (20) for personal use. The rule also prohibits use of mechanical devices for the harvest of freshwater mussels (mussels can be collected by hand-picking only).



Limpkins and moonlight on the Wacissa

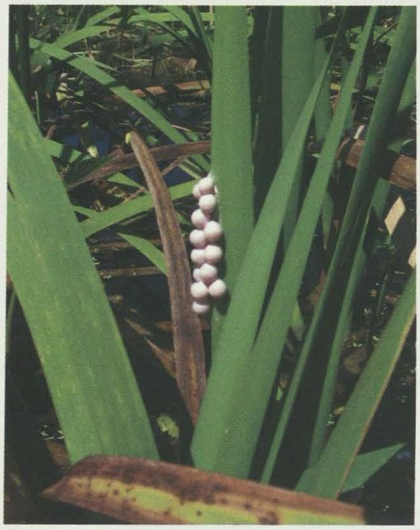
By Liz Sparks

On a crisp February afternoon, FWC's Great Florida Birding Trail coordinator, Mark Kiser, joined me on a quest seeking limpkins by kayak along the Wacissa River in North Florida. The tree tops were laced with molten sunset colors and a full moon promised a spectacular appearance. Wildlife was abundant everywhere as flocks of birds flew from tree to tree seeking the last of the sun's warmth as it slipped below the horizon. We paddled quietly a mile downstream to Big Blue Spring, a favorite swimming spot, and one of 12 springs in the first mile and a half of the river.

Hydrilla now chokes this once-clear, spring-fed river, as it does many waterways in Florida, and the deep spring no longer reveals its crystal depths. Hydrilla blankets the river's surface and restricts boat travel to narrow channels. Among its many negative impacts is the one that concerns us on this trip – hydrilla alters the habitat of the apple snail, the main food source of the limpkin.

Apple snails lay small clusters of pink-tinted eggs on plants and roots at the water's edge between March and September and are most plentiful in the summer months. Apple snails prefer specific water levels. A combination of high water levels and nutrient-rich runoff that enters the river can result

The sharp and twisted end of its curved bill fits perfectly into a snail shell, allowing the limpkin to deftly extract the mollusk.



LIZ SPARKS

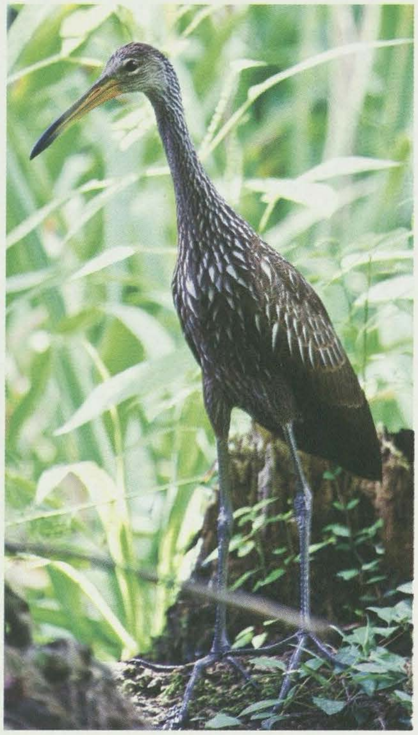
in the growth of dense mats of nonnative invasive plants such as the hydrilla we encounter today. This deals limpkins a double whammy – apple snail abundance declines, and the ones that remain are harder for the birds to locate beneath the mats of hydrilla.

Designated a Species of Special Concern in Florida, the limpkin finds food by both touch and sight, an easier task in clear water. The sharp and twisted end of its curved bill fits perfectly into a snail shell, enabling the limpkin to deftly extract the mollusk. We spotted a limpkin urgently feeding along the water's edge, perhaps finding freshwater mussels, another food source. The limpkin has a loud wailing call often thought to resemble the sound of a human in distress, but this one remained silent during our visit.

We paddled back to the springhead and admired the rising full moon as color faded from the landscape. The flock of varied birds we saw earlier in the sunset were by now a lively, bobbing feathered mosaic, feeding and moving behind the trees along the banks. The night sounds had begun, and we listened enraptured while suspended in the silver ribbon of the moon's pathway on the smooth surface of the water.

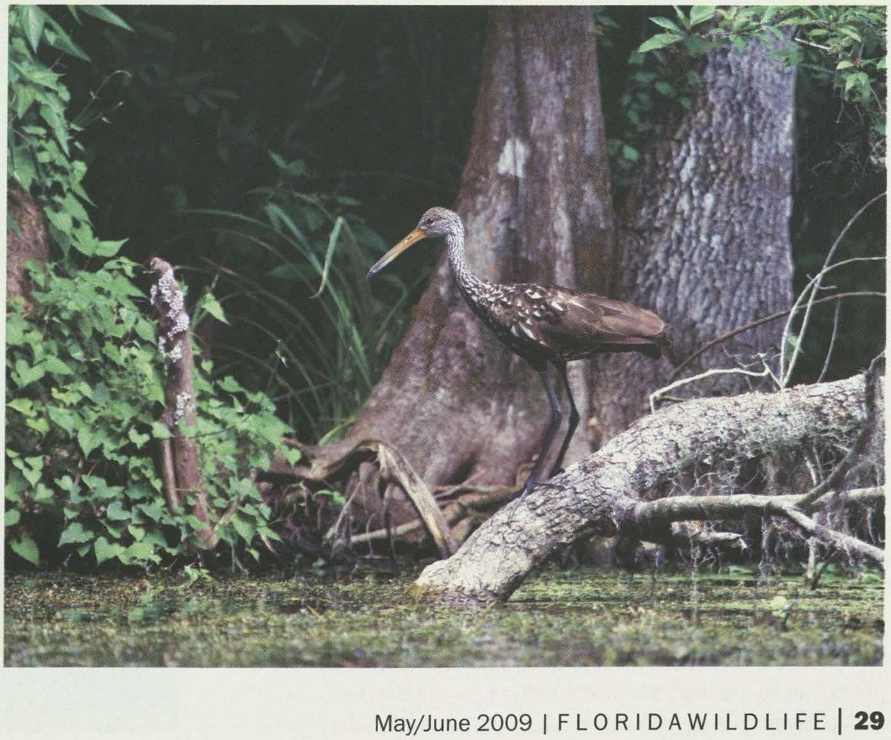
Mark spied a bat surging overhead and explained the difficulty of identifying them in flight when they emerge at dusk. Experts are able to identify them by using ultrasonic bat detectors hooked up to laptops with special software; but our adventure was wondrously simple and we admired the bat without knowing its identity. Barred owls called nearby, spring peepers began chanting, and the symphony of night noises rose in earnest. Even in the cool night air of February the river was alive and magical. We turned on flashlights on top of the kayaks as night descended and appreciated the warmth our life jackets provided.

Mark tallied a total of 30 different bird species during the three hour trip; not a bad number for a winter evening. The Wacissa River is a North Florida treasure and we were grateful to experience its magic, the moon rise and the watery realm of the limpkin. FW



DAVID MOYNAHAN

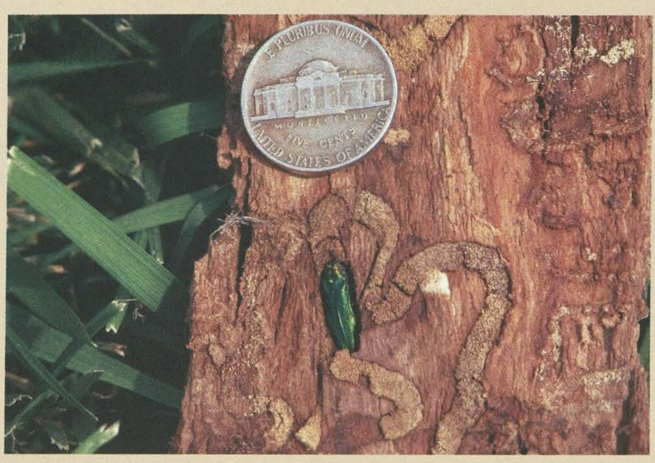
***Facing page:** FWC's Great Florida Birding Trail Coordinator, Mark Kiser, keeps an eye out for any limpkins. A cluster of pink-tinted apple snail eggs (top, left) are the main food source for the limpkin (top, right.) **Below:** A limpkin has its eye on a cluster of snail eggs.*



DAVID MOYNAHAN

Agriculture Commissioner warns of possible infestations in firewood

By Denise D. Feiber



UNIVERSITY OF GEORGIA BUGWOOD NETWORK

An adult emerald ash borer on the trunk of an ash tree with evidence of galleries created by emerald ash borer larvae.

Florida Agriculture and Consumer Services Commissioner Charles H. Bronson is warning the public that firewood can contain destructive pests and diseases and is urging people to take steps to reduce the chance of an infestation.

Several species of destructive wood boring beetles and diseases can inhabit popular firewood varieties. Numerous states are battling insects and diseases and out-of-state campers may bring their own firewood to Florida, or people may move firewood from one area of the state to another. Any wood boring beetles and diseases that may have come along for the ride could infest Florida plants and trees.

An example of a major threat that Florida is currently facing is an insect/fungus complex that causes a fatal disease called laurel wilt. Originating from Asia, the red bay ambrosia beetle is attacking Florida forests, and is now established in several Florida counties, where it is spreading the fungus. Laurel wilt disease kills red bays, sassafras and pond spice and even attacks one of Florida's most important fruit trees, the avocado. Laurel wilt spread into Florida after wood packing material infested with red bay ambrosia beetles was found in Savannah, Georgia. Every effort must be made to slow the artificial spread of this destructive pest on firewood.

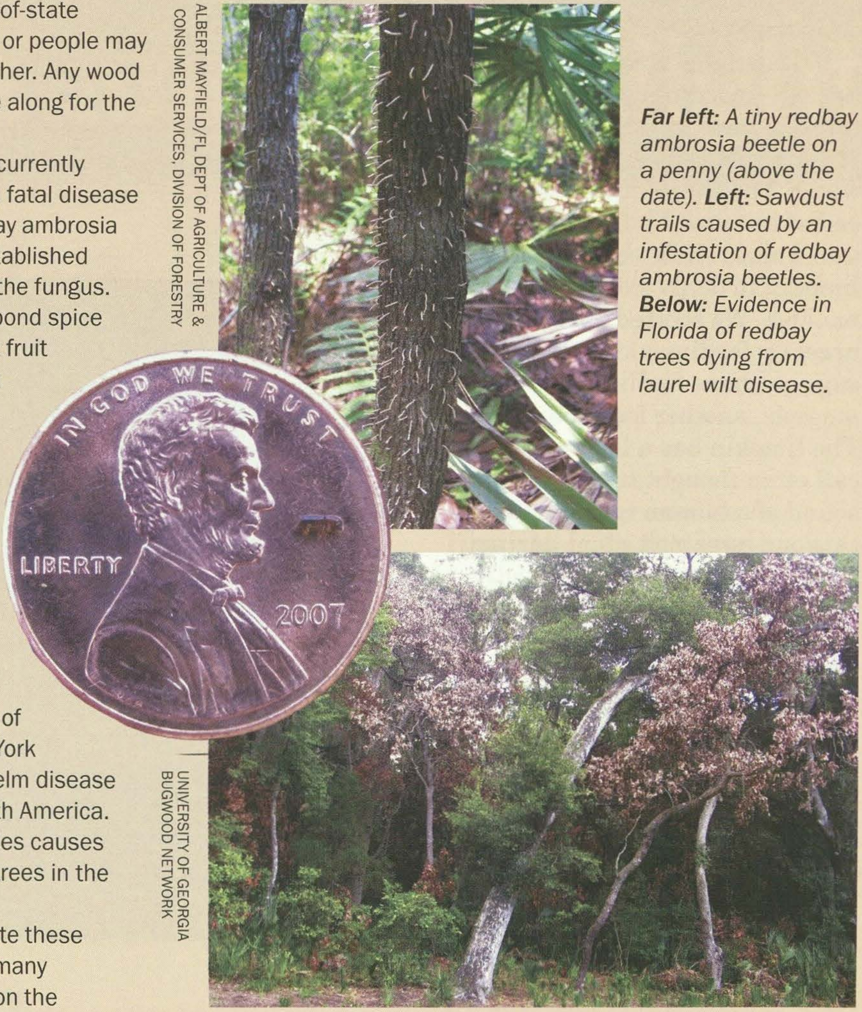
Another example is the emerald ash borer, an insect that has been on the move since its U.S. arrival in 2002. It has killed millions of ash trees in Michigan, Indiana, Ohio, Illinois and several other states. An Asian longhorned beetle infestation has resulted in the destruction of thousands of maple, elm and other trees in New York and Chicago. Though not found in Florida, Dutch elm disease is another serious problem spreading across North America. A fungus transmitted by two species of bark beetles causes the disease and has destroyed over half the elm trees in the northern United States.

"It costs millions of dollars to try and eradicate these pests, not to mention the tremendous loss of so many life sustaining trees," Bronson said. "The impact on the environment can be significant, and we need to do everything possible to protect our trees."

To prevent the introduction of destructive pests and diseases in firewood, follow these simple guidelines:

- Use sources of firewood that are local (within 50 miles) to the area of your campground.
- Do not move firewood from one part of Florida to another.
- Burn all firewood (local or out-of-state firewood) before leaving your campground.
- If you are unable to burn all the firewood because of weather, fire ban or other reasons, and you either live in the same area of the state (within 50 miles) as the campground, or are visiting from out of state, please take the firewood home.
- However, if you live in another area of Florida, please leave the firewood at your campground.
- A public service announcement about preventing the introduction of infested firewood can be viewed at www.doacs.state.fl.us/pi/videos.html.

The Department conducts surveying and trapping activities, including a recently launched trapping program for emerald ash borer, for the early detection of unwanted plant pests and diseases. For information on the pests and diseases discussed above, visit www.doacs.state.fl.us/pi or call 888-397-1517.



ALBERT MAYFIELD/FL DEPT OF AGRICULTURE & CONSUMER SERVICES, DIVISION OF FORESTRY

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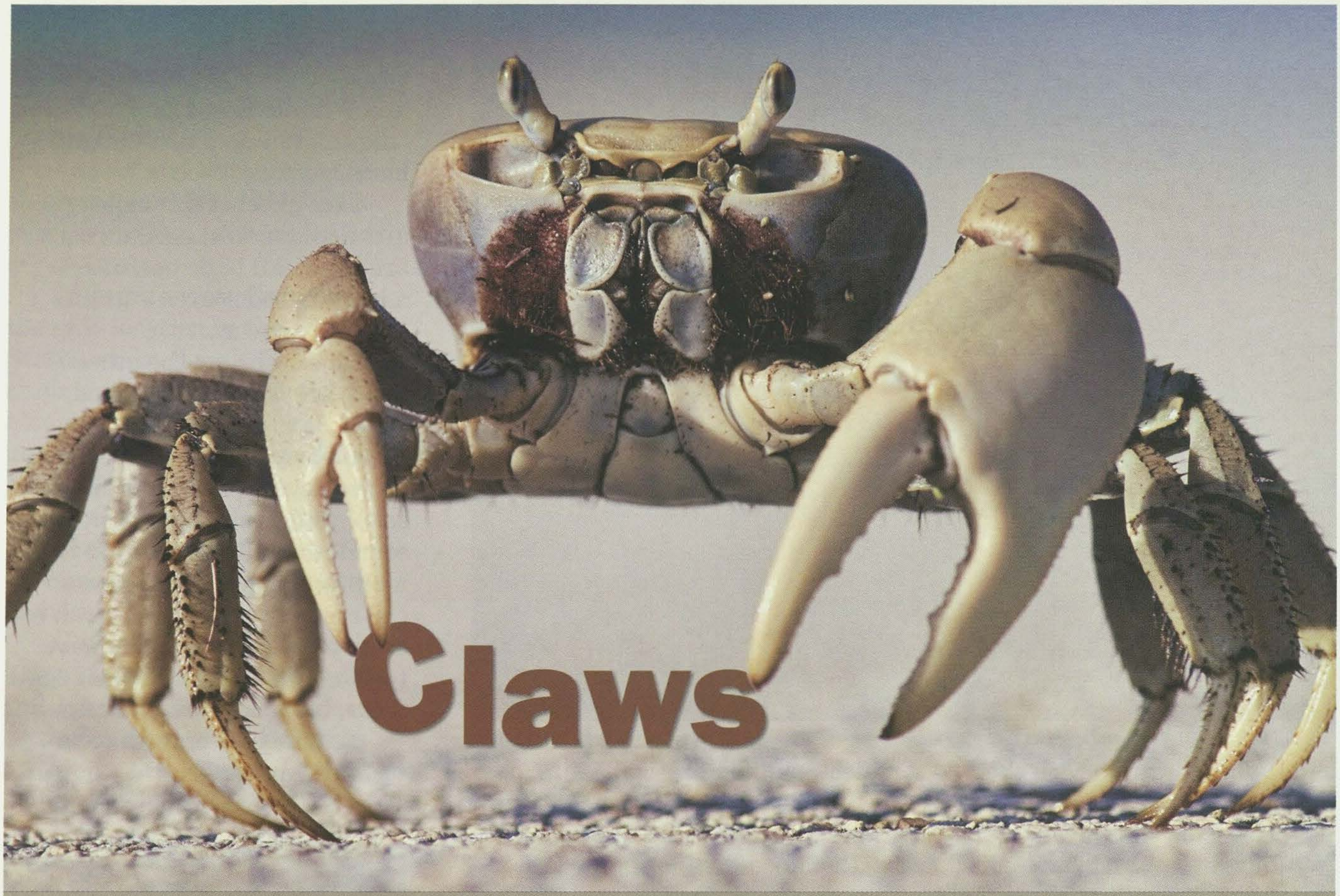
***Far left:** A tiny redbay ambrosia beetle on a penny (above the date). **Left:** Sawdust trails caused by an infestation of redbay ambrosia beetles. **Below:** Evidence in Florida of redbay trees dying from laurel wilt disease.*


THOMAS J. DUNKERTON

Claws

Exploring the world of Florida's crab species

By Henry Cabbage

Florida's beaches and estuaries teem with so many interesting critters that sun worshipers see all the time but never get to know very well. Those little white ghost crabs (also called sand crabs), for instance, will try to flee when you approach them, but if you chase after them, they'll sometimes make a fight of it. These little creatures, barely 2 inches across, will charge back at you, working their pinchers, looking like miniature killing machines.

They're bluffing, though. They'd much rather zip back into their burrows and disappear until nightfall when most of them venture out to feed on other little critters and possibly vegetation they find in the sand. They are pretty sensitive to light, so nighttime is when most of them feed. They locate food using their senses of taste and smell.

Researchers, such as A. Williams in his 1984 publication *Shrimps, Lobsters and Crabs of the Atlantic Coast*, reveal some interesting things about ghost crabs. For one thing, they segregate their burrows according to age. Younger crabs burrow down at the water's edge and may sometimes be inundated with water, whereas older crabs burrow up the beach, well beyond the tidal line.

Ghost crabs hide out in their burrows at mid-day, blocking the entrance with damp sand. They enter the water intermittently to moisten their gills, and can take up moisture from damp sand through structures at the base of their legs, but they cannot live completely in water.

They can make bubbling, rapping or rasping sounds when they want to make a little noise.

Another critter you find along the surf line on sandy beaches is the mole crab. Some people call them sand fleas, but sand fleas are actually a different species.

Children find great recreational value in catching them; anglers use them as bait to catch whiting and pompano in the surf.

Mole crabs live along the surf lines of sandy beaches where they burrow backward into wet

THOMAS J. DUNKERTON

sand. They sit there with their antennae exposed to strain food particles from the waves.

Fiddler crabs don't care for the ocean. They usually live along the shores of estuaries. These little creatures differ from all other true crabs in the extremely large size of the major claw in males.

Males attract females by waving their large claw and producing sound by drumming the claw against the ground.

They make good bait for redfish, seatrout and other game fish near shore.

When I was in elementary school, many years ago when teachers didn't supervise kids at recess as closely as they do today, we used to catch fiddler crabs on the way to school and conducted fiddler crab races on the playground.

Hermit crabs hang out in estuaries too. They take up residence in abandoned mollusk shells. When they outgrow a shell they abandon it and move into a larger one.

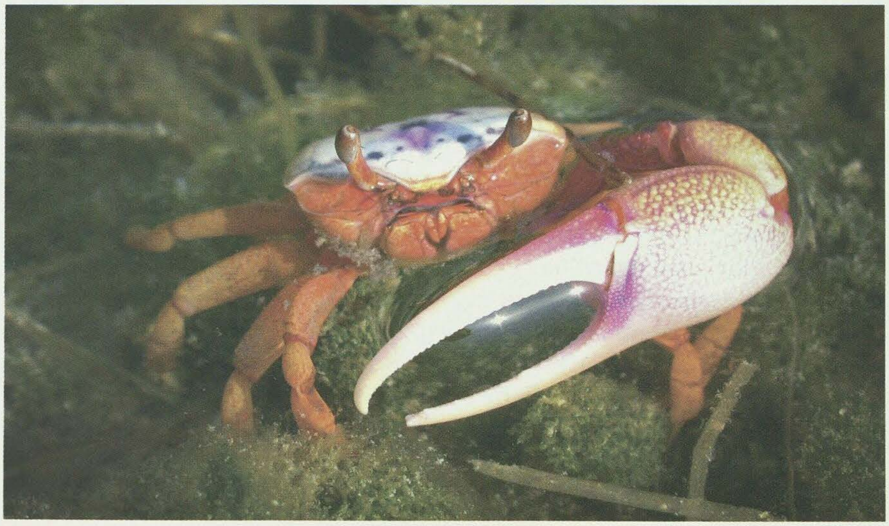
"Sometimes," said Charles Crawford, a crustacean biologist at the Florida Fish and Wildlife Conservation Commission's Fish and Wildlife Research Institute, "they move into a non-natural home, such as a bottle."

Like ghost crabs, mole crabs and fiddler crabs, hermit crabs are too small to be useful as a human food source – in this country, anyway.

Blue crabs, on the other hand, are delicious steamed, boiled, in crab cakes or any other way you cook them. If you've never tried she-crab soup, you're missing out on something fantastic. If you try making some, remember you can't legally use the real crab roe some recipes call for; you have to substitute boiled chicken egg yolks, but that works just fine.

Female blue crabs have a terminal molt when they mature. That is, they shed their shell

THOMAS J. DUNKERTON


ROBERT J. LA FOLLETTE

Above: *The ghost crab is sensitive to light and mostly feeds at night.* ***Left:*** *Fiddler crabs live along the shores of estuaries rather than in the ocean like many other crab species.* ***Top left:*** *The mole crab is a popular bait with surf anglers.* ***Previous page:*** *The carapace (shell) of the blue land crab ranges in color from dark blue to brown to a gray-white.* ***Facing page, top:*** *When a hermit crab outgrows its shell, it leaves it behind and moves into a bigger shell.* ***Right:*** *The horseshoe crab only looks and acts like a crab. It actually is more closely related to spiders and scorpions.*

and develop a new one (that's called molting) for the final time after reaching maturity. Their maturation molt – before the terminal molt – is the only time they mate, and they can carry sperm around for more than a year to produce multiple broods of young.

"Florida's West Coast is the only location in the United States where female blue crabs undertake long-distance, alongshore migrations in a northward direction," said Dr. Anne McMillen-Jackson, a FWRI crustacean biologist. "In all other locations, the females' movement patterns are generally inshore-offshore."

Generally, blue crabs don't like to live in water with high salt levels, so they keep to estuaries mostly, but crabbers can find a few in ocean waters on a good day.

Even more prized than blue crabs on seafood buffet lines are Florida's stone crabs. They support the only sustainable fishery in which people return the animal to the water after removing one of its claws. The stone crab grows a new claw the next time it molts.

"Actually, here in Florida, we have two stone crab species – the Gulf stone crab and the Florida stone crab," said Dr. Theresa Bert, another FWRI crustacean biologist who has studied stone crabs for more than thirty years. "The two species interbreed and produce hybrid young in Northwest Florida."

THOMAS J. DUNKERTON

Unlike blues, they like salty water, so they generally don't favor living in estuaries.

Blue land crabs live on land as adults, sometimes five miles inland. However, they have to lay their eggs in the ocean where larval development occurs.

"Some people consider blue land crabs pests when they dig their burrows in gardens or by their seawalls," McMillen-Jackson said.

There is some demand for blue land crabs as seafood, and the FWC has passed a rule to limit their harvest to 20 per day per person and only from Nov. 1 - June 30 to conserve the species.

Blue land crabs are vegetarians, for the most part, but they do eat a few insects occasionally.

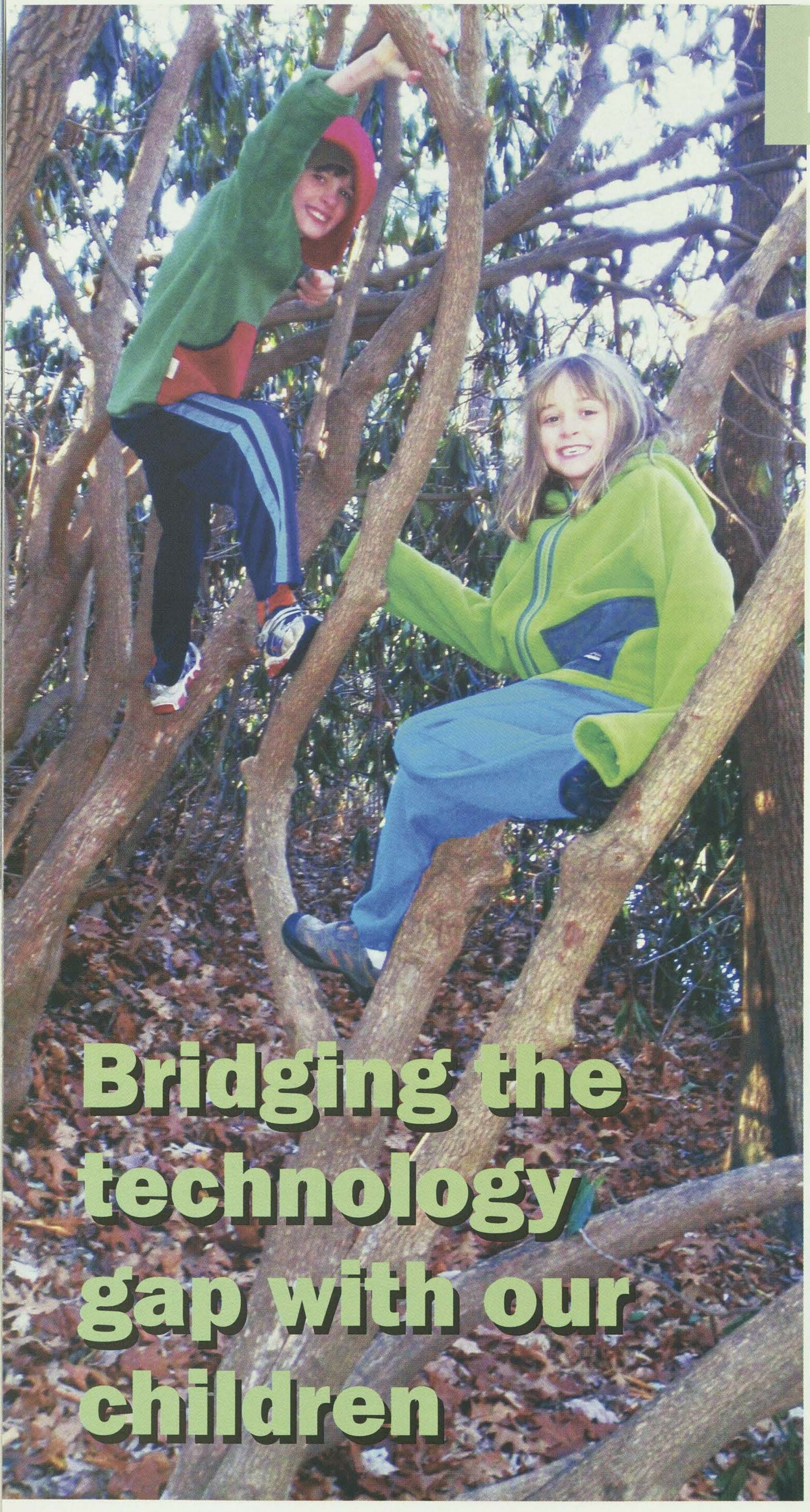
Horseshoe crabs are another critter that's pretty common in Florida, and not really prized as a food source in this country, although they are important in medical research and other fields.

They aren't real crabs. In fact, they are more closely related to spiders and scorpions. They just look like crabs and have a similar lifestyle.

There are many other crab species in Florida's waters, each of them with a fascinating story of adaptation and survival. Anyone who takes the time to stand back and observe them finds a slice of the amazing natural character that makes Florida unique. FW

ROBERT J. LA FOLLETTE

Henry Cabbage is the FWC's media relations director and a life-long yarn spinner of Florida lore. He gratefully acknowledges assistance from FWRI crustacean biologist Dr. Anne McMillen-Jackson and other distinguished scientists in filtering out the hogwash you find about crabs when you look them up on the Internet.



FWC FILES

Bridging the technology gap with our children

Do you know children who spend the majority of their time plugged into a digital world with headphones, text phones and thumbs flying as they text their friends at breakneck speed? If you grew up with rotary-dial phones, eight-track tapes and remember bell-bottom jeans, you may find it difficult to interact with and relate to today's high-tech kids.

The average child spends more time plugged in electronically (average 6.5 hours a day) than their parents do at work in a week. Are they drawn to playing outdoors, building forts or climbing trees? Within the space of a few decades, the way children understand and experience nature has changed radically.

Richard Louv, author of *Last Child in the Woods*, coined the term "nature deficit disorder," describing this disconnect with nature and children's personal experience. There is a growing body of evidence that points to direct exposure to nature as essential for a child's health, physical and emotional development. A number of studies correlate childhood obesity, attention deficit disorder and depression with a lack of contact with the natural world.

There is great interest being generated around the globe about this phenomenon and the need to reconnect our youth with nature. In October 2008, the U.S. House of Representatives passed legislation to strengthen environmental education experiences for schoolchildren, both inside and outside the nation's classrooms. By a bipartisan vote, the House approved the No Child Left Inside Act, which includes development of outdoor environmental education activities as a regular part of school curriculum

Meanwhile in Florida, a statewide coalition called Get Outdoors Florida! has been formed. This is a partnership combining many groups with a mission to "engage communities, families, and individuals in outdoor experiences to achieve healthier lifestyles and sustain Florida's natural resources."

It is encouraging to know momentum is building to get kids outdoors, but how do we personally entice our youngsters to experience the same rewards of contact with nature that we grew up with and continue to appreciate? Can we lure them outside – and challenge ourselves – with a simple sport involving technology? Can we successfully bridge the technology gap?

Let's look at an easy way to successfully make the leap and entice our kids to join us outside. A simple, low-cost, hand-held GPS unit and access to the Internet are all it takes to try out an activity known as geocaching. This popular activity combines the intrigue of a scavenger hunt with the opportunity for a foray outdoors.

Access the official geocaching Web site, geocaching.com, to learn more details and look for an area near you to see if any caches are hidden nearby. Caches may range in size from old ammo cans to tiny film canisters or plastic cartons, and frequently have a name that contains a clue to their location. They usually are fairly easy to access, and may be tucked between tree roots, under moss and are often located near trails.

Inside a cache may be small trinkets, toys, stickers and other miscellaneous goodies. The idea is to take something and leave something in exchange, so plan ahead and bring a small item to trade. Most caches have a log where you record the date and time you visited.

Search for caches by zip code or address on the geocaching Web site and look for sites as you travel – a great way to explore new areas. Geocaching can help you discover parks and special places you never knew about. Imagine how much fun it will be to do this with kids. So, maybe you can't figure out how to program the GPS or find the Web site, but the average fourth-grader will have this accomplished by the time you locate your glasses.

Digital photography is a sure way to successfully capture your adventure together outdoors. Cameras have become cheaper, and consistently capture quality images even if you lack photographic skills. Learn to download pictures, create maps, albums and share the fun online, even if your youngster lives a great distance away.

There are many ways to use technology to enhance your planning for outdoor adventures. Visit some of the Web sites listed to the right, learn how to create your own interactive map and photo sites, and forward these on to your grandchildren. Your hipness score will be off the chart.

Google maps are a wonderful way to look at the world at no cost and allow you to create your own interactive maps. Online interactive maps are used by birders, paddlers, equestrians, hikers and just about everyone heading outdoors. I'm just waiting for an interactive barbeque-joint Web site. FW

FWC FILES

Need more information on how to connect kids with nature?

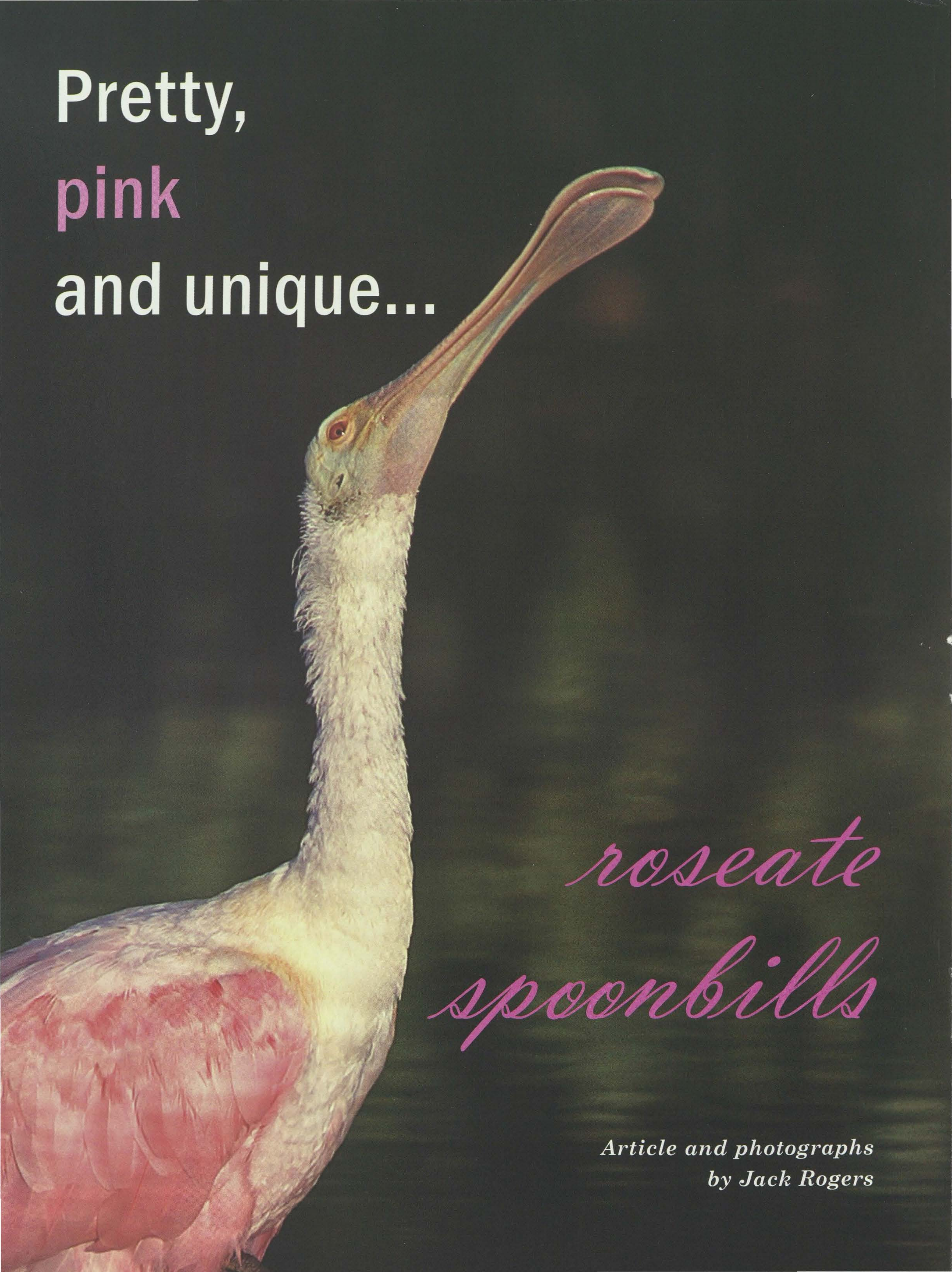
FWC FILES

For more information about the growing interest in linking kids to nature, visit these Web sites:

- Get Outdoors Florida!
  MyFWC.com/fishing/goof
- Richard Louv
  richardlouv.com
- No Child Left Inside
  www.ed.gov/nclb/landing.jhtml?src=pb

For some high-tech fun, visit these Web sites:

- Bird sighting mapping and tracking
  www.birdpost.com/
- iGCT Geocaching Toolkit
  (iPhone application – free download)
  igct.btstsoft.nl/
- Trailguru
  (iPhone application – free download)
  www.trailguru.com/ui/tour/iphone.php
- Main Trailguru site
  www.trailguru.com/wiki/index.php/Main_Page
- EveryTrail
  (iPhone application – free download)
  www.everytrail.com/iphone.php
- Main EveryTrail site
  www.everytrail.com/
- Google Earth is also available as a free download for the iPhone.



Pretty, pink and unique...

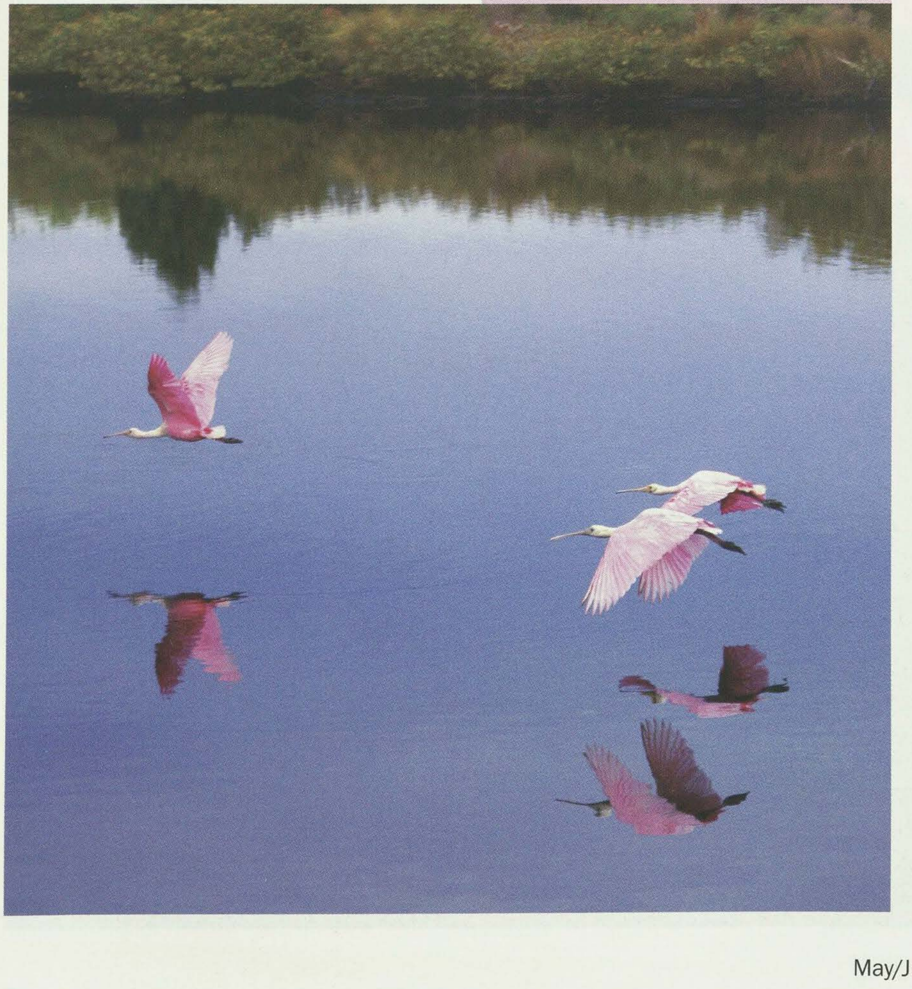
roseate spoonbills

Article and photographs
by Jack Rogers

Visitors to Florida might expect to see pink flamingos among the many wading birds they encounter, but the knowledgeable nature lover knows the flashy pink wading birds with funny bills found in Florida's wetlands are actually roseate spoonbills. These beautiful birds are easily recognizable by their brilliant plumage, which, as their name suggests, is mostly pink, but ranges from pure white along the neck to orange along the underside of their tails. In mature birds, a deep red "epaulet" also marks the wing shoulder. Adult spoonbills have another interesting feature, a featherless, green-tinged head. Male and female spoonbills are identical in appearance, but young birds have a full-feathered white crown and lack the distinctive red wing flash.

Spoonbills get the second part of their name from their very distinctive, flattened, spoon-shaped bills, which are quite unlike the bills of any other birds in Florida. The unique shape provides a very effective feeding mechanism that is used to detect and grasp prey found as a spoonbill forages in shallow water. The highly sensitive, laterally flattened bill provides very little resistance as it is swung from side to side through the water. When a spoonbill detects movement, indicating possible prey, it reacts with lightning-fast reflexes, grasping the prey, tossing it up into the air and swallowing it whole. The entire process of capturing and eating prey happens in microseconds and it takes a careful observer (or a camera with a fast shutter speed) to determine what is being consumed. Typical spoonbill prey includes minnows, crustaceans and aquatic insects.

Above: A spoonbill tosses a small crustacean in the air. *Below:* ***Immature*** spoonbills with white crowns fly along Black Point Wildlife Drive. ***Facing page:*** A spoonbill calls while tossing its head back.



Spoonbills, although sometimes mistaken for flamingos, actually are more closely related to ibises. The scientific name for the roseate spoonbill is *Ajaia ajaja*. Spoonbills, or spoonies as they are often affectionately called, grow to be about 32 inches tall and

have a wingspan of more than 4 feet. Spoonbills are relatively quiet birds, vocalizing very little. Occasionally, spoonbills will communicate with a low, guttural honk accompanied by a thrown-back head. I have seen this behavior often and, though it often seems to precede a flyaway departure, I have never seen indication of alarm or danger.

In Florida, spoonbills are found along the south to central Gulf Coast, but they also may congregate in other wetlands areas throughout South Central Florida. This is especially true during the dry winter season when wetlands decline and prey is concentrated. This seasonal abundance of prey is perfectly timed for the beginning of the nesting season, providing plenty of food for demanding young chicks. Spoonbills nest together in rookeries with other wading birds, often in mangrove trees on small islands that are difficult for predators to reach. They produce

Above: A spoonbill uses its sensitive bill to probe for prey beneath the water. **Below:** Spoonbill landings are not always graceful. **Facing page:** A parent feeds its two spoonbill chicks.

one brood of two or three eggs each year, and male and female share equally with incubation and chick-rearing activities.

Spoonbills in Florida once numbered in the thousands, but hunting to supply feathers for the millinery trade in the early 1900s almost eliminated spoonbills in Florida. Florida has designated spoonbills as a species of special concern. In recent years, the primary threat to spoonbills has been loss of habitat caused by degradation and destruction of wetlands. Establishment of refuge areas like Merritt Island and Ding Darling national wildlife refuges and the Everglades National Park has been essential in preserving wetland areas vital for feeding, roosting and nesting activities. Recent counts estimate that the number of spoonbill breeding pairs in Florida has rebounded to nearly 1,000.

The Audubon Society of Florida and other conservation groups are conducting studies to determine the effects of habitat loss and other environmental changes on the Florida spoonbill population. One such study, the Spoonbill Banding Project, is being conducted by the Audubon Tavernier Science Center in cooperation with the United States Geological Survey and Everglades National Park. Its purpose is to monitor spoonbill population fluctuations and movements that might be related to habitat disruption.

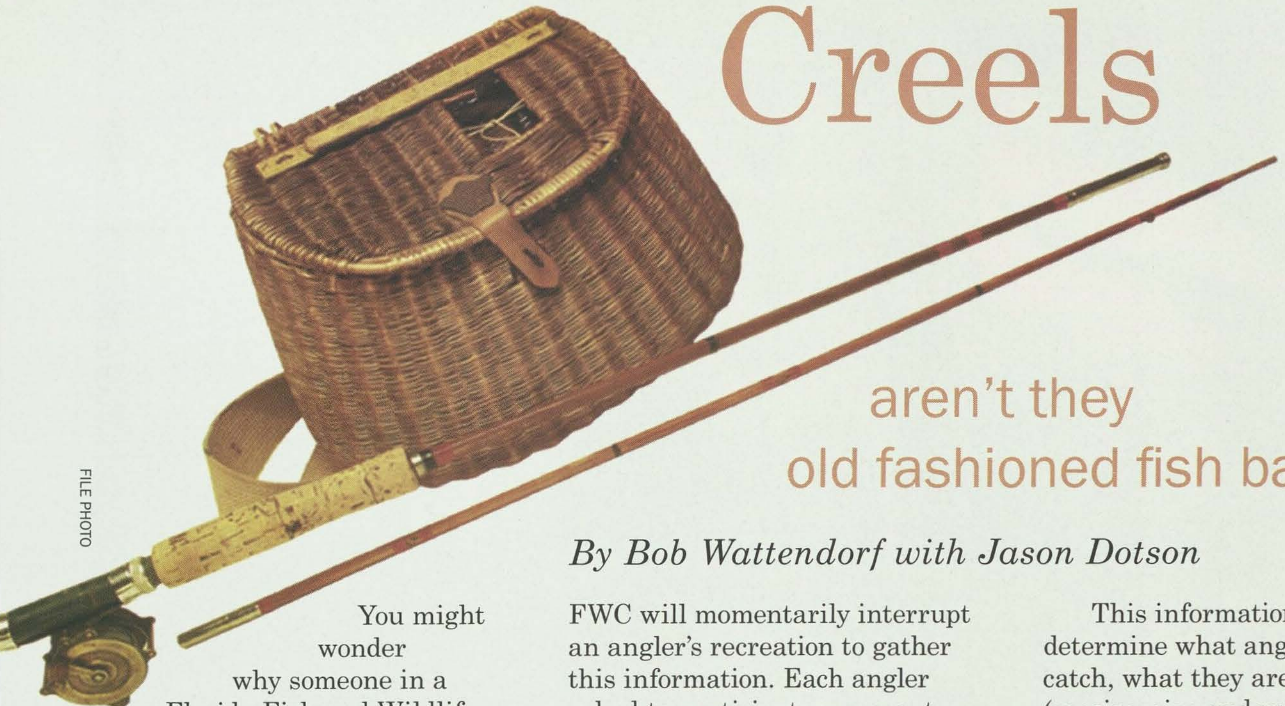
Anyone observing a banded spoonbill can contribute to this important work by reporting their sighting. Color bands will be on the bird's upper leg. A red band indicates a bird was born at a bird colony in Tampa Bay; black bands indicate birds from the Everglades region. Sightings can be reported online at www.audubonofflorida.org/science/spoonbills.htm.

With studies like this, along with today's improved understanding of the importance of wetlands to our environment and water supply, and the establishment of refuge areas across the state, it seems likely that Florida's wading birds, including the unique and beautiful roseate spoonbill, will be around for us to share with generations to come.

Although spoonbills do not migrate, the best time to observe them in Florida is during the early winter dry season when they congregate to feed in groups. East Coast residents usually can count on finding spoonies at Merritt Island National Wildlife Refuge near Titusville. The staff at the visitor center is knowledgeable and up-to-date on all the recent bird and wildlife sightings, so that is a good place to begin your visit. Black Point Wildlife Drive is my favorite place to find spoonbills on the refuge. Many of my favorite spoonie shots were captured along this scenic drive.

On Florida's West Coast, opportunities to see spoonbills are more numerous. In fact, it's not unusual to see them along golf course water hazards. A good place to see them in a more natural setting is Ding Darling National Wildlife Refuge on Sanibel Island. The paved wildlife drive there winds through a series of impoundments and lagoons that host a variety of wading birds including spoonies. Don't forget to take your camera! FW

Creels



FILE PHOTO

aren't they old fashioned fish baskets?

By Bob Wattendorf with Jason Dotson

You might wonder why someone in a Florida Fish and Wildlife Conservation Commission (FWC) boat is stopping you and asking you to participate in a "creel survey." Two questions come to mind: What is a creel? Why does it require a survey? Very good questions – one answer involves tradition; the other answer involves a healthy fishery.

A creel is a wicker basket used for holding fish that an angler has caught, or a wicker fish trap. Today, the FWC still uses the expression derived from that old-fashioned, but very stylish, basket.

Your answers to the FWC's questions are important to the future health of Florida's freshwater fisheries.

The FWC's freshwater fisheries biologists need to know what you have been catching. Despite using old-fashioned terminology, the sophistication of these vital surveys has grown over the years, and they are now a critical source of information for determining how Florida's freshwater fisheries are doing.

Since creel clerks who conduct these interviews cannot talk to every angler, biologists and statisticians work together to carefully determine a sampling scheme of when and where the FWC will momentarily interrupt an angler's recreation to gather this information. Each angler asked to participate represents many other anglers that the FWC cannot talk to, so it is very important they get the most accurate information possible. The interviewers will want to know how long you've been fishing, and what you caught and harvested as well as what you released. They may also measure your fish, check them for tags and ask some questions about where you live and other information that helps to explain results, including information on your age, which relates to license sales.

> **FWC biologists need to know what you have been catching. The sophistication of vital creel surveys has grown over the years, and they are now a critical source of information for determining how Florida's fisheries are doing.**

This information is used to determine what anglers want to catch, what they are catching (species, size and numbers), whether they are keeping them, and other factors that allow biologists to estimate the health of a fishery. Combined with other data, such as information from electrofishing samples, biologists can determine what regulations are needed for size and creel limits, what is needed for habitat restoration, supplemental fish stocking, and where additional access, such as boat ramps, shoreline access or fishing piers, may be needed.

For biologists to make the decisions that ultimately impact the quality of your freshwater fishing, they need honest, accurate information. False responses that over- or underestimate your catch can lead to unnecessary or unrealistic solutions. For example, an underestimate of angling success could lead to stricter creel limits (the number or size of fish anglers may legally harvest) when they aren't necessary and stunting of the fish population because enough big fish aren't harvested to allow the others to grow rapidly. In case of an overestimate of angling success, the decision may be made that habitat improvements aren't needed because the fishery is doing so well, delay a proposed fish stocking, or prevent appropriate harvest regulations from being implemented.

Of course, biologists consistently use multiple sources of data to reduce the chance these types of errors will occur. But with recurring budget cuts, creel surveys and angler-attitude surveys become increasingly cost effective. As other options – such as electrofishing, seining or trawling – are reduced to save money, or sampling – such as block nets and gillnetting – are reduced because of adverse public perception, the need for honest, accurate answers to creels surveys becomes more and more important.

So the next time someone tells you the FWC is conducting a creel survey, remember you are representing many anglers and helping to ensure the safe and sustainable future of quality recreational fishing in Florida when you give a few minutes of your time and accurate information to the creel clerk. **FW**

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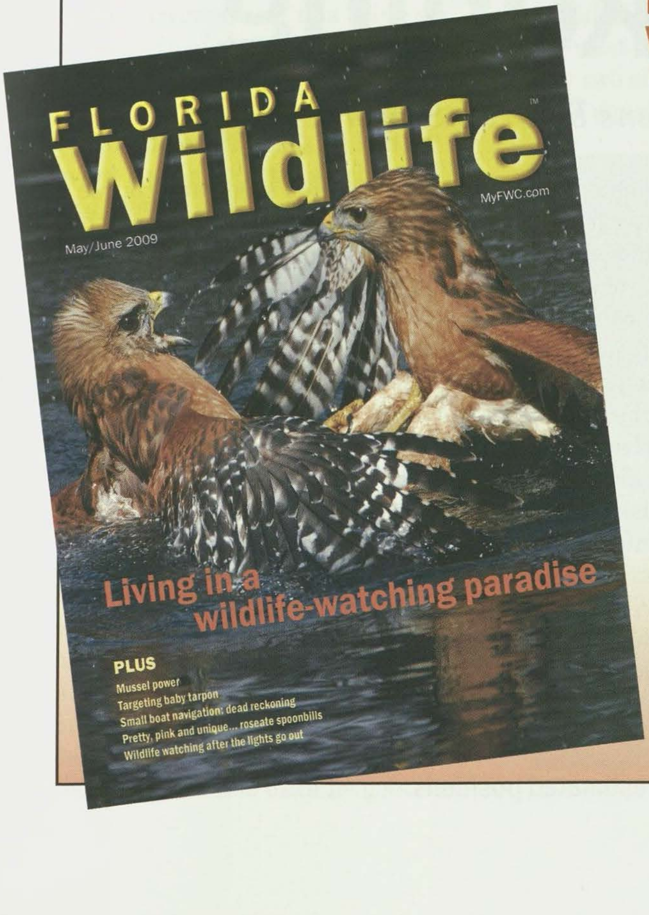
A creel clerk measures an angler's bass before returning it.

*Instant licenses are available at MyFWC.com/License or by calling 1-888-FISH-FLORIDA (347-4356). Report violators by calling *FWC or #FWC on your cell, or 1-888-404-3922. Visit MyFWC.com/Fishing/Updates for more freshwater fishing information.*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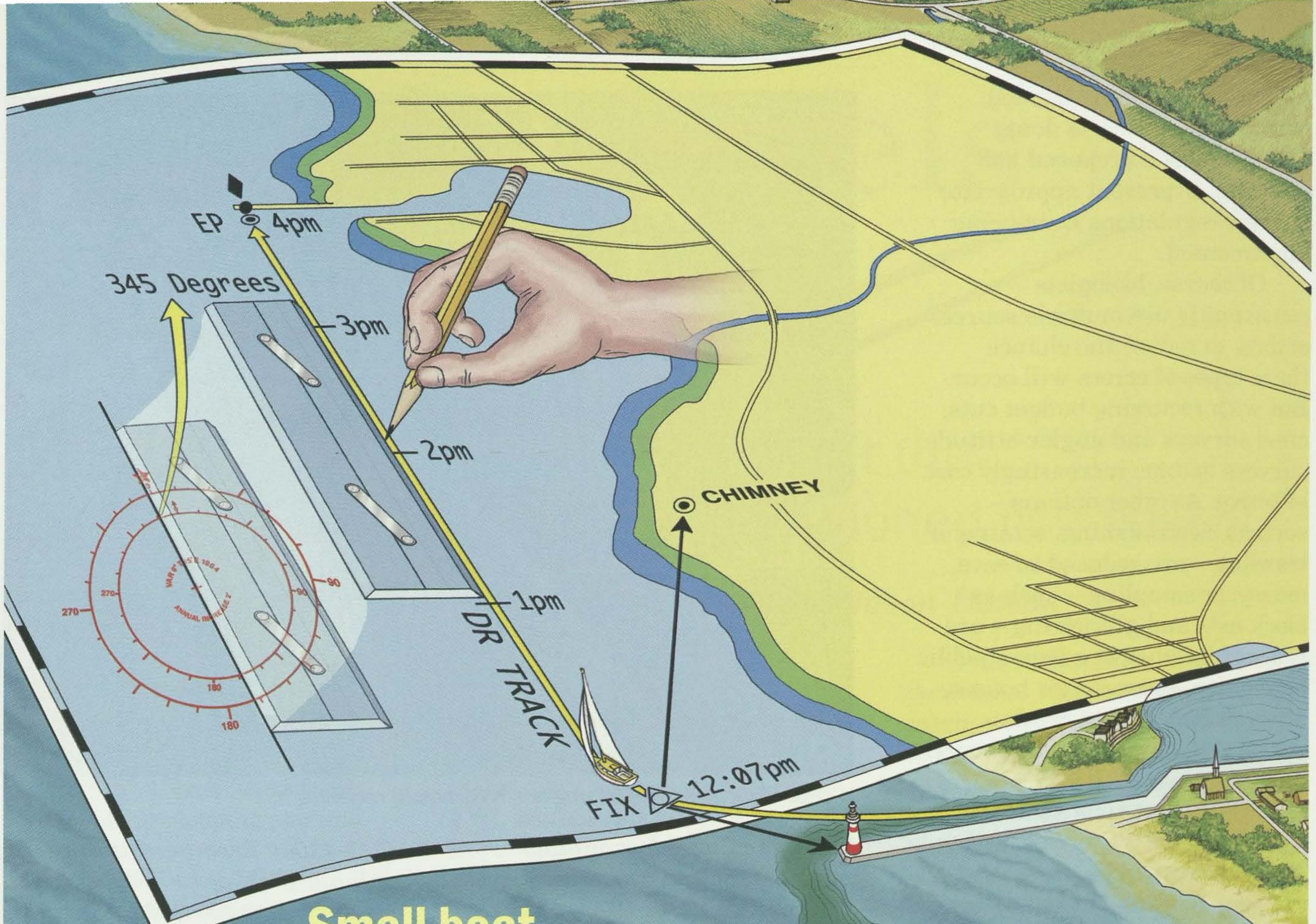


Lay out a dead reckoning track with estimated positions.

Small boat navigation 102:

Dead reckoning

By Henry Cordova ~ Illustrations by Fritz Seegers

Bay or coastal cruising should be like walking around your house in the dark – you should know where everything is and where not to step. After gaining a little experience, you will use your piloting skills to plan your voyages so you maximize the navigational potential of the waters you are sailing. For example, you will learn how to lay out your courses and waypoints so if an unexpected problem occurs, such as an Aid to Navigation (ATON) has been blown away by a storm, you will have alternatives ready and mapped out. Don't paint yourself into navigational corners, and always have a Plan B.

Once this all becomes second nature (and piloting will teach you this) you can really enjoy the convenience and reliability of a GPS because you will know that if it does fail, you don't really need it. But what happens when you can see no landmarks, when distance from land, or darkness or bad weather leave you sailing alone, isolated from the rest of the world? The answer is dead reckoning.

The term "dead reckoning" is of uncertain origin, but probably derives from "ded" or "deduced" reckoning. It is the art and science of navigating by making judgments of a ship's position based on its estimated speed and course and informed guesswork about the forces, like winds and currents, acting on the craft. It is used to come up with estimates of position so the crew can anticipate hazards, or new landmarks which can help establish a new position or fix.

In conjunction with piloting, it is the primary non-electronic means of small craft navigation and, until quite recently, it also played a major role in navigation of large vessels on the high seas. In practice, piloting and dead reckoning are intertwined and inseparable. Both are learned and applied simultaneously by professional navigators. The traditional methods used for determining a fix, either by piloting or by sextant observations of celestial bodies, provide the raw data and initial estimates upon which dead reckoning operates. Fixes provided by GPS also can be used as a basis for dead reckoning, and the old and the new can be used as checks on each other.

For example, consider the case of a coastal cruiser, traveling from one harbor to another. The navigator would lay out a compass course line from his starting point to his destination and, having a rough idea of the speed of his vessel, would mark that line on the chart with ticks indicating where he expected to be at certain times during the voyage. As the ship travels, these location estimates, or estimated positions (EPs), would suggest which landmarks, such as lighthouses, geographical features, or large buildings marked on the chart, would be visible and available for triangulation and determining precise fixes. As these fixes are plotted on the chart, the navigator gets an idea if his vessel is being slowed down or speeded up by currents, or if it is being set to one side of the course line or the other.

A new course line, a dead reckoning or DR track, is laid out every time a good fix is achieved and plotted on the chart. In this way, the navigator always has an up-to-date estimate of his location based on solid data. If his source of external navigational information is cut off – if his ship is too far offshore to see charted landmarks, or bad weather sets in – he has a recent fix and a DR track which will give him an idea of his position for the near future.

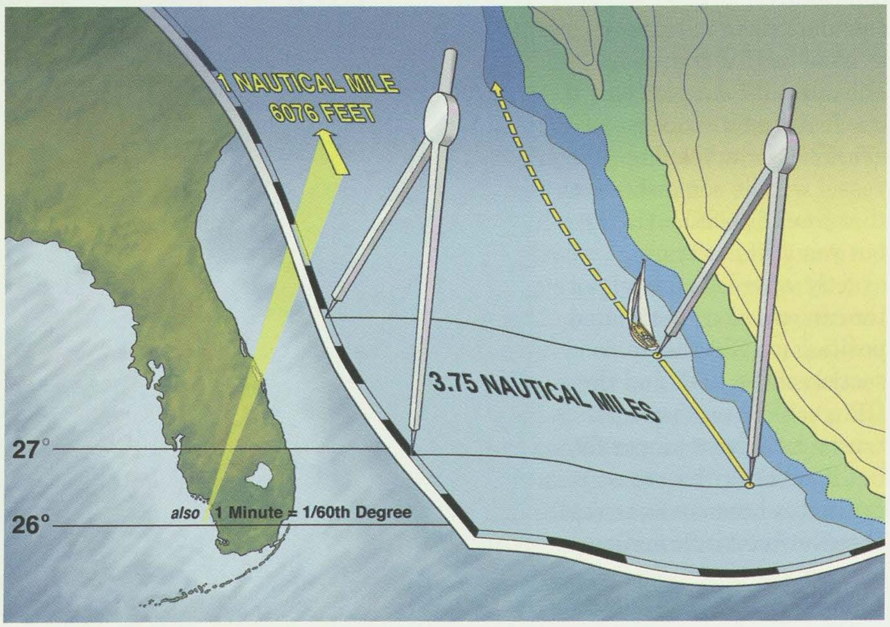
The time spent dead reckoning may be a few minutes, as when a small boat is crossing a foggy harbor, or several weeks, as when a ship is crossing an ocean, but the principle is always the same. The dead reckoning position will be all the navigator has until he gets the next fix. It is essential that fixes be taken frequently when conditions are good, so when they deteriorate, estimates can be based on a solid, recent position.

Many navigational techniques, such as piloting via triangulation, radar ranging, LORAN, radio direction finding and celestial, all require a rough idea of one's location as a seed position. Even a ship successfully navigating with GPS should maintain a good DR track as a check and backup in case the GPS should fail or be misinterpreted.

After each fix is plotted on the chart, a pencil course DR track is drawn to the next waypoint (destination or turning point) and ticks on the course line drawn with the time the ship expects to get there. These estimated positions are drawn with circles around them (proper fixes are marked with triangles), and with the time. Using the familiar "DRT" equation – distance equals rate times rime, or D = RxT – and the laws of algebra, you can solve this expression for either rime (T = D/R) or rate (R = D/T). There are nautical slide rules that can do this calculation for you, or you can use a pocket calculator. If you know any two of the variables in the DRT equation, it is easy to solve the third. For example, if you have been traveling for 20 minutes since your last fix at a speed of 12 knots, you will be 4 nautical miles along the DR track. D = RT where 4 = 12 x 1/3. (Remember, 20 minutes is a third of an hour.)

A knot is the nautical term meaning "1 nautical mile per hour." Never say "knots per hour," which is lubberly. A nautical mile is roughly 2,000 yards, or 6,076 feet. Nautical miles are convenient at sea because the nautical mile is equal to 1/60 degree, or one minute of latitude, and latitude ticks are always drawn on the east and west sides of the chart.

Use the dividers drafting tool to measure off distances from the latitude scale and transfer them to your DR track, or conversely, to measure distances on the chart and scale off the distances using the latitude scale. Nautical charts usually employ the Mercator map projection, so distances on the chart can be measured directly off the latitude scale with your dividers. You don't have to learn all this today; you'll need instruction and plenty of practice for dead reckoning. Just keep in mind that the DR track on the chart will serve as a record of your voyage and a paper computer to help solve navigational problems.



Use dividers to measure off a chart distance.

Your sources of information will include your compasses and your log (the device which indicates your speed through the water). Keep in mind the log measures speed through the water; you need to know speed over the ground, so a constant comparison with your speed as revealed by your navigation and that indicated by your log will give you an insight into the currents affecting your boat.

The practice of navigating a boat using piloting and dead reckoning revolves around the DR plot drawn on the chart. There is the record of all navigational observations and calculations, a projection of future plans and all the information the makers of the chart were able to include, all drawn in a systematic manner any seaman will be able to understand at a glance. Make sure that if the vessel has to maneuver, or deviate from its course, that the DR track is updated to include this change of course and/or speed. The DR track represents the best possible estimate of your position until you plot your next fix. It must reflect every maneuver and the exact time it occurred.

Dead reckoning also enables the skipper to develop estimated positions based on partial navigational information, in addition to calculations or extrapolations of course and speed. For example, suppose only one feature on shore is available for a bearing. The vessel will lie somewhere on that line of position (LOP), but you will not know exactly where. The navigator can use as an estimated position (or EP) the intersection of the LOP and the DR track. This is not as trustworthy as a proper fix, but it is better than most estimates because some real observational information contributes to the estimate. Later on, after that landmark is no longer visible, a new landmark may come into view. The pilot can then shoot a bearing on that, plot the LOP and use his knowledge of his course and speed to "slide" the previous LOP along the DR track using his parallel rulers.

The course and speed are already roughly known, so the old LOP is moved along that DR course (keeping the same angle to the chart grid) for a distance corresponding to the time since the last bearing (using the D = RxT equation). The new and old LOPs, along with the DR track, will provide a triangle on the chart and the boat will probably be somewhere near it. Of course, this is not as good as a proper fix made up of two or more simultaneous LOPs, but it's better than a sheer guess. This procedure is called a running fix, and often, it is all a navigator has when sailing down a barren coast where charted features are few and far between.

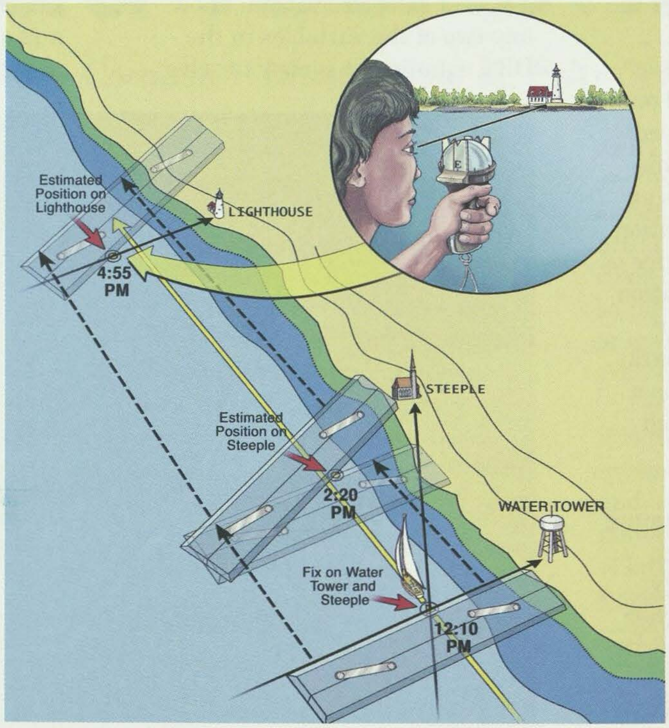
There are all sorts of tricks you can use to come up with a serviceable EP, or to help stay on track. For example, suppose there is a featureless island near your boat with no visible landmarks. You can always shoot bearings to either end; the tips of the island, after all, are landmarks and are plotted on the chart. Of course, you will have to convince yourself you are actually shooting the ends of the island, not a cape or promontory which obscures your view of the land extremities. These are called tangent bearings.

Another trick is to select your course so that if you have to make a turn to a new course as you approach your destination (perhaps to avoid a reef), the point where you make your turn will be one where some landmark bears a certain bearing. As you approach the spot where you plan to make your turn, you shoot bearings until the turn bearing you calculated earlier turns up on your compass.

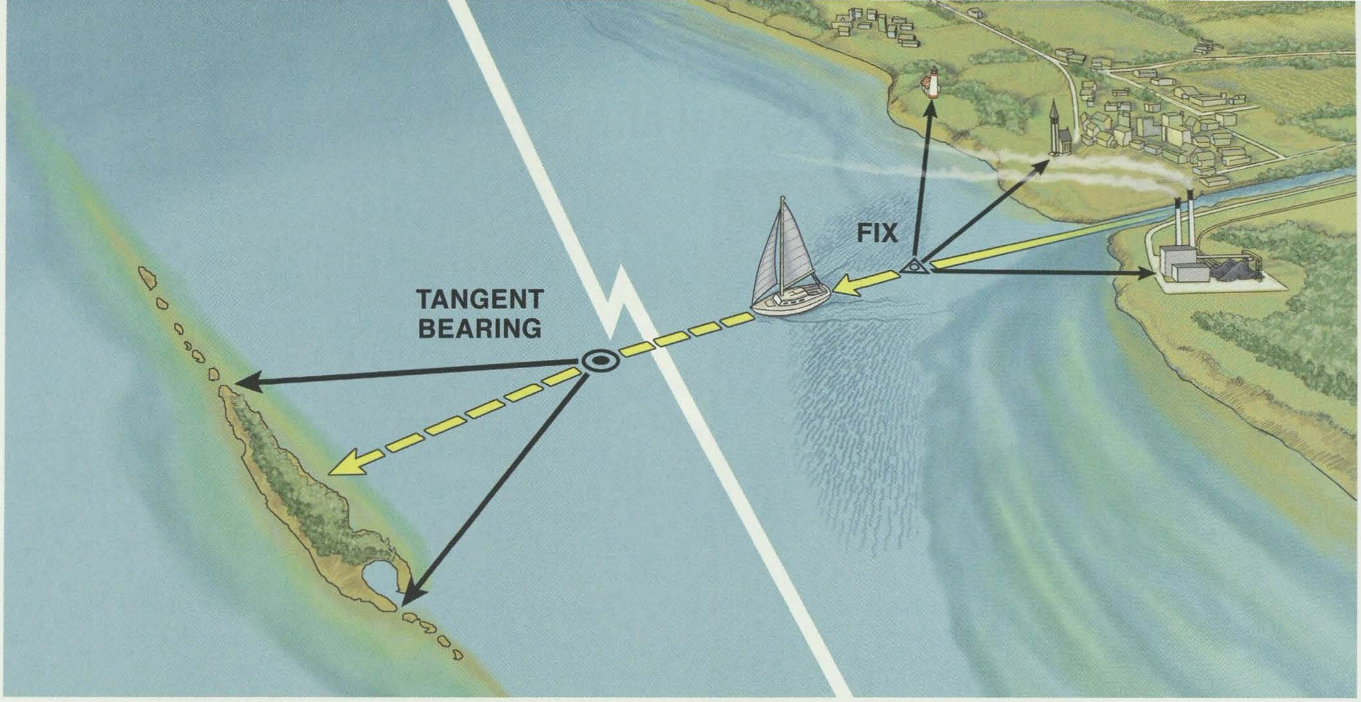
A related technique is the danger bearing. Ahead of time, you calculate some bearing which must be greater or less than some value to ensure you are in safe waters. Another technique is the range. For example, if you know a light on shore can be seen from, 21 miles away, draw an arc of radius 21 miles on your chart, centered at the light and when the light comes into view, you know you are somewhere on that arc. Range arcs are LOPs too, and they can be crossed with others to give a position.

Again, none of these techniques is as reliable as a proper triangulated fix, but they are far superior to nothing at all. On the other hand, a range derived with your boat's radar can be extremely accurate. Piloting and dead reckoning can be done with radar. It is not only a collision avoidance system, it is a very useful tool for the navigator, although it sometimes is difficult to properly interpret radar images.

I can't emphasize enough that coastal piloting and dead reckoning are not skills that can be picked up by reading an


Estimated Position on Lighthouse
LIGHTHOUSE
4:55 PM
STEEPLE
Estimated Position on Steeple
2:20 PM
WATER TOWER
Fix on Water Tower and Steeple
12:10 PM

Plot running fixes along a dead reckoning track



Tangent bearings confirm an estimated position on a dead reckoning track.

article or two. The actual mechanics of plotting fixes and taking bearings, as well as laying out and maintaining a DR track, are fairly straightforward, but integrating all this information into a navigational plan requires experience.

Let's look at a typical navigational problem. Your task is to sail to an island offshore, well out of sight of land to the east. The island is long and thin, and it lies across your path. The harbor – your destination – is at the southern end. The rest of the coastline is bordered by dangerous reefs. There are no aids to navigation on the island, or on your way there. If you miss the island in the dark, you could sail past it and out to sea.

The usual drill is to simply draw a line on the chart from your point of departure to your destination, determining the course and distance from the chart, and getting under way. Your knowledge of your boat's speed, or your log, will give you a rough idea of your speed, and how long it will take you to get to your destination, so you will mark off your DR track where you expect to be at certain convenient time intervals (an hour, a day, whatever the length of the trip requires). You try to plan your voyage so you will arrive at the island well after daybreak, not too early or you might stumble onto it in the dark and not too late because you want a full day's daylight to work with once you start getting near its dangerous waters.

It's highly unlikely your vessel will remain on its DR track throughout the entire voyage, or that you will adhere to your schedule as planned. Wind and current will constantly throw you off, so it is possible you will be way off your original DR track by the time you reach the island's vicinity. If you are set to the north of your DR track, you will hit the island for sure. But as the harbor is at the southern end of the island, if the current sets you to the south, you might miss the island altogether in the dark or in bad weather. It is better to set your original course and speed to the center of the island, so if you're off a bit you are not as likely to miss it.

As you sail from your home port, take as many fixes as possible on known landmarks and determine how your true course and speed match your DR. This will give you some idea of how the set and drift induced by wind and current affect your boat. Make sure any maneuvers you make are reflected in your DR plot. Once you're out of sight of land, you're going to have to use this knowledge to help correct your course.

As you approach the island, take tangent bearings to try and develop a fix, and if any landmarks on the island are marked on the chart, try and locate them to verify your position. Any information on the chart might help develop an estimated position. For example, if the island is surrounded by a shallow shelf that is marked on the chart, keep an eye on your depth finder. Suddenly crossing into shoal water is a rough, but useful LOP. It might tell you how far offshore you are where distances might otherwise be difficult to judge. If you have a GPS aboard, navigating with it while you practice these traditional skills is a great way to learn.

Even if your GPS and other electronic equipment are functioning perfectly, the ancient arts of piloting and dead reckoning are a useful backup for emergencies that will greatly enhance your enjoyment on the water, as well as give you confidence and peace of mind. But most importantly, they will put you in spiritual connection with all the generations of mariners that went to sea before you. It's the difference between being a weekend boater and being a seaman. FW

Volunteers see wildlife seasonal changes up close and personal

FWC FILES

A volunteer took this photo of a barred owl and its owlet in a nest.

Volunteer and get a front row seat for viewing Florida's fantastic plants and wildlife.

Sometimes it is hard to see changes in Florida's seasons, but FWC volunteers see them first hand. Experiencing the ebb and flow of natural cycles helps them form a bond to the public land and its inhabitants. Volunteers donate their time to maintaining the land, guiding visitors on birding hikes, conducting wildlife surveys and taking photographs.

FWC volunteers, who regularly guide visitors on birding hikes, spotted a group of baby owls on one of their visits. They came back to see those owls grow and finally fledge from their nest a month later. They were able to share their excitement with visitors on the bird hikes they led.

Recently, FWC citizen science volunteers, who collect common invertebrates at the same spot on a weekly basis, made a fantastic discovery of a rare beetle. Returning to the same place to collect the invertebrates reveals the populations' ups and downs that occur throughout the year. Now, volunteers eagerly await the spring explosion of invertebrate life to see what rare or new species they might collect next.

Art and nature blend when an FWC volunteer photographer visits weekly to take snapshots of wildlife throughout the year. Using her lens to create an up-close and personal shot of the bird in view gives her the chance to connect with wildlife in a unique way. She does not keep her experience to herself, but shares her find with other visitors by placing them in a bird handbook she created.

Volunteers who come back to the same land have a special wildlife viewing experience that few can get otherwise. For information on volunteering at FWC, visit MyFWC.com/getinvolved.

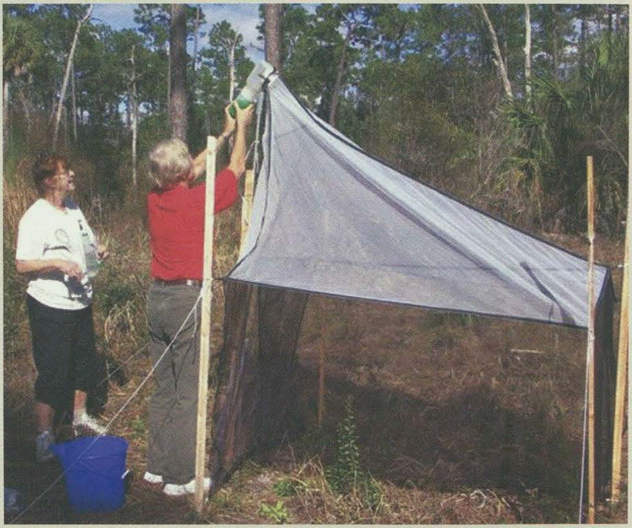
Invertebrate monitoring leads citizen scientists to new discovery

Two dung beetles, the gopher tortoise copris beetle (*Copris gopheri*) and the gopher tortoise aphodius beetle (*Aphodius troglodytes*) were newly documented by several FWC volunteers on the Chinsegut Wildlife and Environmental Area. The Chinsegut Nature Center volunteers are collecting invertebrates from Malaise traps and light traps at designated sites on the Brooksville Ridge which stretches from Gilchrist County to Pasco County. Ridge Ranger volunteers are doing the same on the Lake Wales Ridge of Polk and Highlands counties. The traps were set up by entomologist David Almquist for the Florida Natural Areas Inventory, as part of a project funded by the Florida Wildlife Legacy Initiative.

There are at least six species of beetles dependent upon gopher tortoises. Some are dung beetles, but others are predators of eggs or larvae of other arthropod species.

"These beetles are not found everywhere the tortoises are, and we know little about their ecological requirements. This type of find gives us one more piece of the puzzle." Almquist said. "I am confident that having volunteers survey for invertebrates will lead to other new discoveries."

The pilot project is a partnership between the FWC, FNAI and The Nature Conservancy, coordinated through FWC's Office of Recreation Services, promoting citizen science and wildlife conservation projects.



BECKY BROWN

***Above:** Judith and Judie Simpson prepare a Malaise trap for collecting invertebrates. **Left:** A rare beetle caught by volunteers at Chinsegut Wildlife Environmental Area.*

Targeting baby tarpon

Article and photographs by Capt. Fred Everson

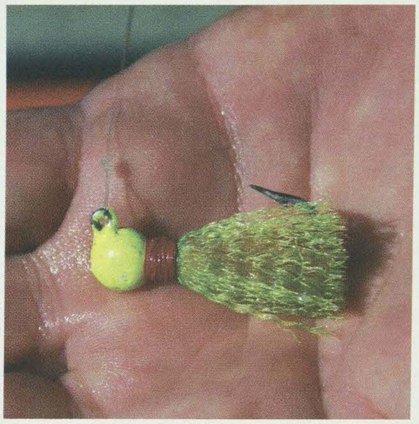
Baby is a relative term when applied to gigantic creatures such as manatees, whales and tarpon. Baby tarpon are juvenile fish, 1 to 2 years old, between 12 and 16 inches. They inhabit the canal systems and backcountry of Southwest Florida that serve as nurseries for young fish. This habitat is a tough place to fish; even a small flats boat is unwieldy in the narrow canals overgrown with mangroves and clouds of mosquitoes. Trolling motors are a no-no, even with juvenile fish, and a push pole can be intrusive enough to shut down a bite. However, this is an ideal avenue for paddle fishermen in a canoe or kayak, not only for stealth, but the paddleboats are also more agile in the close confines of narrow, mangrove-lined canals.

Recently, I bought a canoe after I saw a guy rowing one past my house on the Little Manatee River. He seemed to be gliding along effortlessly, and it occurred to me that I could cover a lot more water in that craft than I could ever reach with my poling skiff. And as an old clam digger who grew up pulling oars in cedar rowboats, rowing has always appealed to me, so I started to shop around.

I found a used canoe, and then Googled "rowing platform for canoe." The first site that came up featured a video of a guy rowing a canoe – exactly what I had in mind. For a little more than $200 – delivered – I had a rowing rig and a pair of oars for my canoe. In an hour's time, I had the thing put together with an electric drill and a couple of wrenches. The rowing platform fastens to the gunwales of the canoe via two metal clamps that require no tools to install. The oarlocks are on elbows that stand off the side of the canoe, which makes rowing a snap.

I was amazed at how easy it was to move the canoe with the oars. I added a folding seat with a backrest that belts onto the platform. It's a lot more comfortable than sitting on the board, and the back support extends my fishing time in the canoe by several hours.

A friend in Matlacha on the southwest coast of Florida had told me about all the baby tarpon in some manmade canals, so we set up a trip. We had access to the water on some private property with the owner's permission, and as we rigged the canoes at the water's edge, there were little tarpon rolling all around the dock. But from long experience with tarpon, I knew that seeing is not catching.



Once we got the canoes in the water, I rigged one of my custom 8/12-foot flats rods with a white jerkbait at my friend's suggestion. It looked a bit large for 15-inch fish, and sure enough, I missed four or five strikes before deciding to downsize.

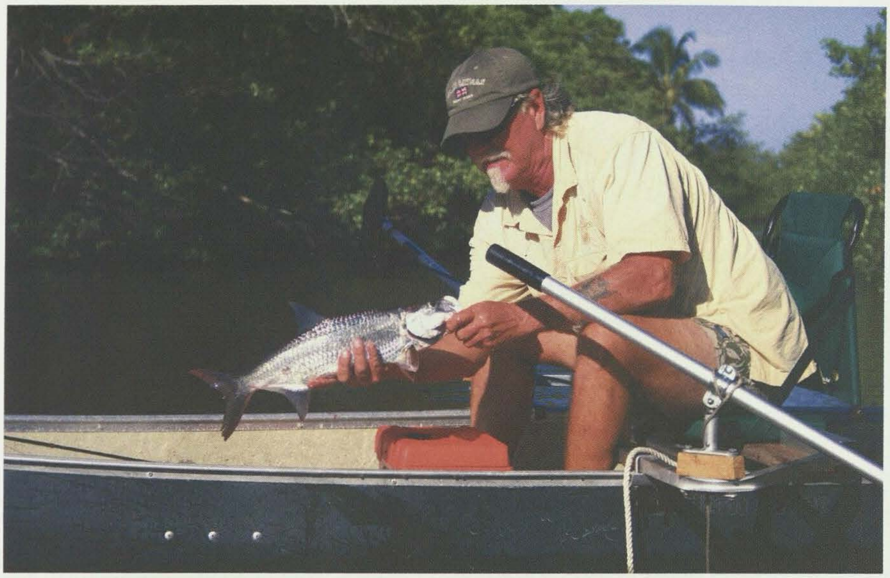
I have hooked numerous big tarpon on half-ounce jigs, so I thought I would try a smaller version in the form of a yellow pompano jig. It has a quarter-ounce ball head painted yellow, with a short, nylon, yellow skirt tied with red thread. This color combination will catch just about anything that swims, and I often use it on redfish in the winter months when the water is clear and shallow. Downsizing the lure to the size of the fish made perfect sense, and my guess was, it would be effective on tarpon.

That assumption proved to be correct. My second cast with the jig was nailed by a 17-inch tarpon that launched into the air. Six or seven jumps later, I brought my first baby tarpon to heel. We quickly posed it for a photograph and released it, none the worse for the wear. I was as hooked as that fish, and could not get the jig back in the water fast enough.

The canal was barely wide enough to turn my 16-foot canoe around, and in some places, so narrow I could not extend the oars. In such a close mangrove environment, you usually can expect to find plenty of mosquitoes and no-seeums, but this day, we had a light breeze, and they were not a problem. However, I would never enter such a place in Southwest Florida without a hefty supply of high-quality bug repellent.

We began our day shortly after sunrise, and the fish remained active all through the morning. We saw a pod of fish rising on the shadow line of a dead-end canal that was rounded like a cul-de-sac. The dead-end of the canal lay in the shadows, and there were at least five or six fish rising steadily.

I eased the canoe into position and tucked the oars under my knees – this is a fairly comfortable arrangement that worked all morning. I made a cast and a fish struck the jig as soon as it hit the water. This looked to be a bigger fish – about 18 inches. I got a good look at it as it rocketed 3 feet



Above: *Capt. Fred briefly examines a tarpon before quickly releasing it.* **Facing page, top:** *Capt. Fred found success catching tarpon with a yellow, quarter-ounce, ball-head pompano jig.* **Bottom:** *The rowing platform is fastened to the canoe's gunwales and the oarlocks are located on elbows off the side of the canoe.*

in the air and sent the jig flying past me with a violent shake of its head. It was like getting shot at with an air rifle – a good case for sunglasses with shatterproof lenses. Over the course of the day, tarpon fired the jig back at me three more times, but luckily, I came away unscathed.

Anytime I had to adjust the position of the canoe, I could put the rod down and pick up the oars. And if I needed the canoe to stay put, I had an anchor at hand on 15 feet of rope. When traveling from spot to spot, I rowed conventionally with my back facing forward. When fishing, however, I reversed the canoe and pushed the oars so I was looking forward.

I carried a fly rod and a long spinning rod that day, but the confines of the canal proved too tight to throw the fly. I'm sure it would have been at least as effective as the pompano jig, or perhaps even more so, but the spinning rod worked just fine. I fished 10-pound-test monofilament with a 20-pound leader, but these fish are apparently not leader-shy. The water is quite murky and tannin stained, and the leader makes it easy to land the fish. The real trick to fishing with such a long rod is to leave a rod's length of line between the fish and the rod tip. This way you can stick the tip straight up in the air to grab hold of the leader.

Young tarpon are not particularly fragile, but they are not as rugged as redfish. I wet my hands before touching a fish, and was careful to keep them horizontal. Holding any fish vertically by the lower lip is bad form – it's an unnatural position for any fish out of water, and not a good practice for fish you intend to release.

I marveled at the miniature silver kings as I released them back into the murky water. I probably hooked a dozen fish, but tarpon being tarpon, I only managed to lay hands on three fish. The rest threw the jig with a nice variety of aerial acrobatics. I would like to think that, with some luck, another angler 70 years hence might catch and release the same fish in Boca Grande, Tampa Bay or Homossassa. The life span of Gulf Coast tarpon is about 80 years, so odds are good that the fish I caught that day will still be swimming around 75 years from now. That's a comforting thought. FW

Tarpon anglers can help researchers

Biologists at the FWC's Fish and Wildlife Research Institute and Mote Marine Laboratory need your help to collect tarpon genetic information.

The tarpon genetic recapture study gives you the opportunity to make a direct contribution to advancing scientific research for one of Florida's most popular sport fish. If you are interested in collecting DNA samples, FWRI will provide you a free and easy-to-use sampling kit. The kit contains an abrasive pad that is used to remove skin cells from the outer jaw of the tarpon. When collecting the skin cells, remember to leave the fish in the water unless you have a harvest or possession tag to attach to the fish.

Biologists welcome samples from any tarpon, regardless of size or capture location. Each DNA sample identifies a tarpon's unique genetic "fingerprint." Using DNA is a cost-effective, less-invasive way to tag tarpon, and unlike conventional tags, it lasts forever. Scientists compare new tarpon DNA samples with cataloged samples to determine if the tarpon has been caught and sampled previously. Scientists also use this information to determine movement of tarpon in waters off the coast of Florida.

To obtain a tarpon DNA sampling kit, e-mail TarponGenetics@MyFWC.com or call 1-800-367-4461.

FWRI and Mote researchers will notify you if any of the fish you sample are re-captured. If you have computer access, you will be able to map your tarpon's tag and recapture locations. If you collect and return a DNA sample directly to FWRI or to one of the statewide collection centers listed on the FWRI Web site, you will be entered in a random drawing for various prizes.

To learn more about FWRI's research projects, visit research.MyFWC.com.

Field Notes

Florida Fish and Wildlife Conservation Commission sworn personnel are fully constituted police officers with the authority to enforce all laws of the state, not just those relating to resource conservation.

Rough transfer

The crew of the C.T. Randall offshore vessel conducted a marine fisheries inspection on a lobster vessel and noticed the individuals on board acting strangely. Officer Ryan Smith spoke with the vessel operator, who told him one of the mates on board was very ill and might die unless he received immediate medical attention. Officer Smith evaluated the individual, who was on five different medications and was having trouble breathing. The officers performed a transfer at sea from the commercial vessel to the C.T. Randall in 4 to 6 foot seas because the commercial vessel only ran at 6 knots. The subject was monitored by Officers Smith and Jeff Luce until the Randall was met at the dock by EMS. The subject was transported to the hospital and was expected to make a full recovery.

Someone else shot it

Officers Rich Wilcox and Jason Richmond received a complaint from someone who saw a deer being loaded into the back of a truck the previous night. The witness provided a tag number, and the officers visited the address of the suspect truck and saw where a deer had been cleaned. The deer's hide, with buckshot holes, was recovered from a nearby pond. The officers visited the suspect at his workplace, and he said he shot the deer with a .22 because it had been hit by a vehicle. He named two other people in the truck with him who helped clean the deer. The three then divided the meat. When confronted with the hide, the suspect agreed it had been shot, but must have been shot by someone else. The officers found a 12-gauge shotgun in his truck and a box of ammo with two shells missing. The three were charged with taking/possessing deer during the closed season and taking wildlife from a roadway.

Misrepresentation

The FWC received a complaint about a person representing himself as a fish and wildlife officer and attempting to check campers the previous night at a camping area. The man threatened one of the campers with arrest if he did not let him search his camp. The camper refused after the suspect could not provide law enforcement identification. It was reported that, after leaving the camp area, five shots were fired from the suspect's vehicle. Lt. Joe Allen and Officer Joe Brooks located the suspect and obtained a statement from him. After a warrant was obtained, the man was arrested for impersonating a fish and wildlife officer and booked into the county jail.

That bar is closed

Officer Carmon Brownell received a complaint about a couple of people harvesting oysters from a closed oyster bar in Apalachicola Bay. Officer Brownell located two harvesters "hogging" (harvesting by hand) oysters on the closed oyster bar. Due to the size of Officer Brownell's vessel, he was unable to approach the harvesters in the shallow water. When the harvesters recognized the patrol vessel, they immediately fled to the shore, where they loaded their oysters into a vehicle and drove away. With assistance from the Franklin County Sheriff's Department, the harvesters were stopped and directed to a boat ramp where Officer Brownell was waiting. The harvesters were issued six misdemeanor citations for oystering in closed waters, and for having no saltwater products license and no Apalachicola Bay oyster harvest permit. The harvester's eight bags of oysters were seized and returned to the water alive.

Hit with shot

Officers Dennis Sharpe, Rodney Boone and Matt Tyre responded to a complaint about a doe deer being cleaned in a back yard. Officer Boone arrived at the residence first and saw two men quartering a doe deer. One of them said the deer had been hit with a vehicle. Inspecting the deer carcass, Officer Boone saw the deer had been shot. The officers continued to interview the subjects, and they eventually admitted to taking the deer with a .22 magnum rifle while bailing pine straw. Both subjects were issued citations for taking doe deer during the closed season. The .22 was seized as evidence, and the deer meat was donated to a church.

Cited

In a single day, Officer Adam Resnick issued 17 panther-zone citations while working radar on Corkscrew Road in Lee County. Ninety percent of the citations were for driving 70 mph or higher in a marked 50 mph zone.

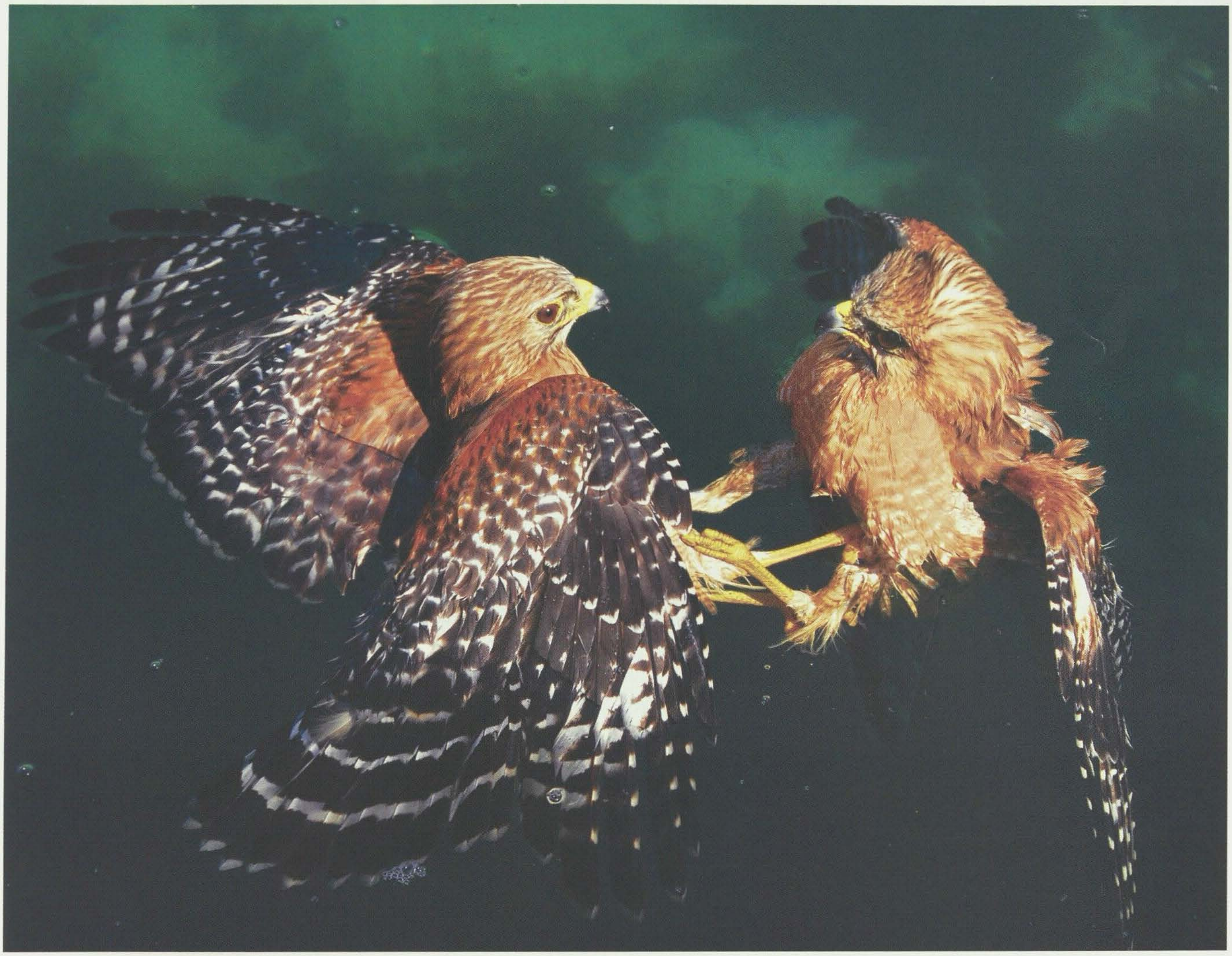
Come out wherever you are

Officers Steve Golden, Anders Bergstrom, William Green and Lt. William Burns responded to an incident near Big Pine Key after three people abandoned their dinghy when officers attempted to conduct a vessel stop. The subjects threw items into the water while abandoning their vessel on a shallow flat, then fled onto a mangrove island. Officers recovered undersized stone crab claws and lobster tails from the scene. The three subjects hid on the island and refused to return to their vessel.

Manhunt

Lt. Steve Farmer and Officers Bret Gill, Harold Barry and Leslie Sharp assisted with a manhunt involving a person who fled from the Florida Highway Patrol on I-75. The suspect was wanted for attempted murder. The Columbia County Sheriff's Office, Department of Corrections, Florida Highway Patrol and FWC officers assisted in the apprehension of the subject. Lt. Farmer, Officers Barry and Sharp assumed perimeter positions while Officer Gill assisted one of the Department of Corrections K-9 teams. The K-9 team and Officer Gill found the suspect in a heavily wooded area near U.S. 441 and CR 238. He surrendered without incident and was cuffed by Officer Gill. A search revealed the subject was in possession of illegal narcotics.

Witnessing a battle between hawks

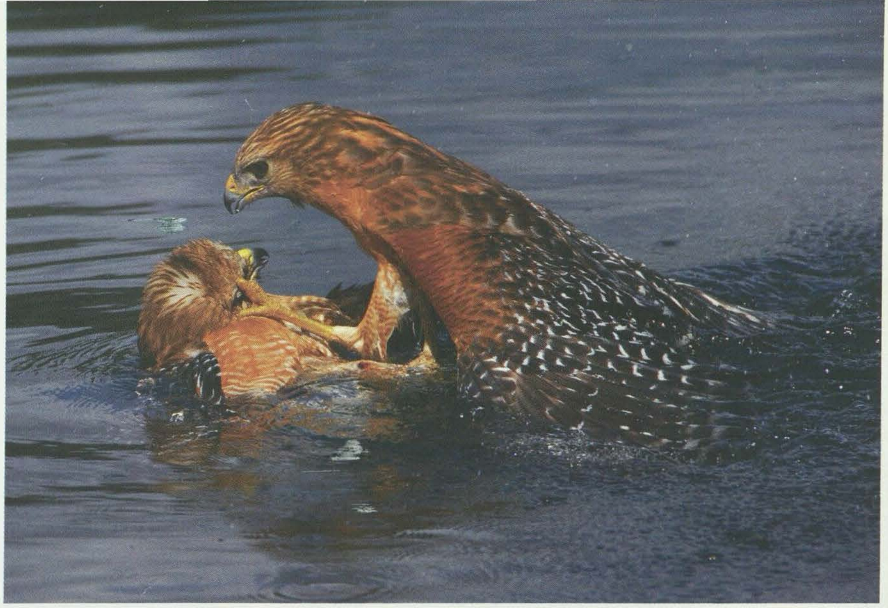


Article and photographs by Joe Richard

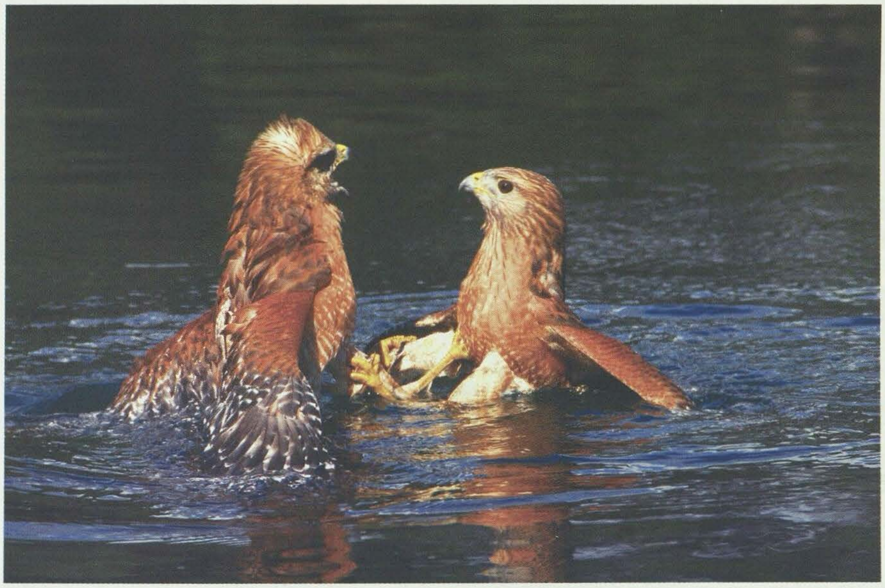
This past January, I was fishing with bass pro angler Ron Klys on the Rainbow River near Dunnellon, when we noticed two hawks splash into the water nearby. They were having a serious fight. I had heard of two bald eagles doing the same thing on Lake Toho, so we hurriedly boated over to take pictures of the two red-shouldered hawks in the midst of watery combat.

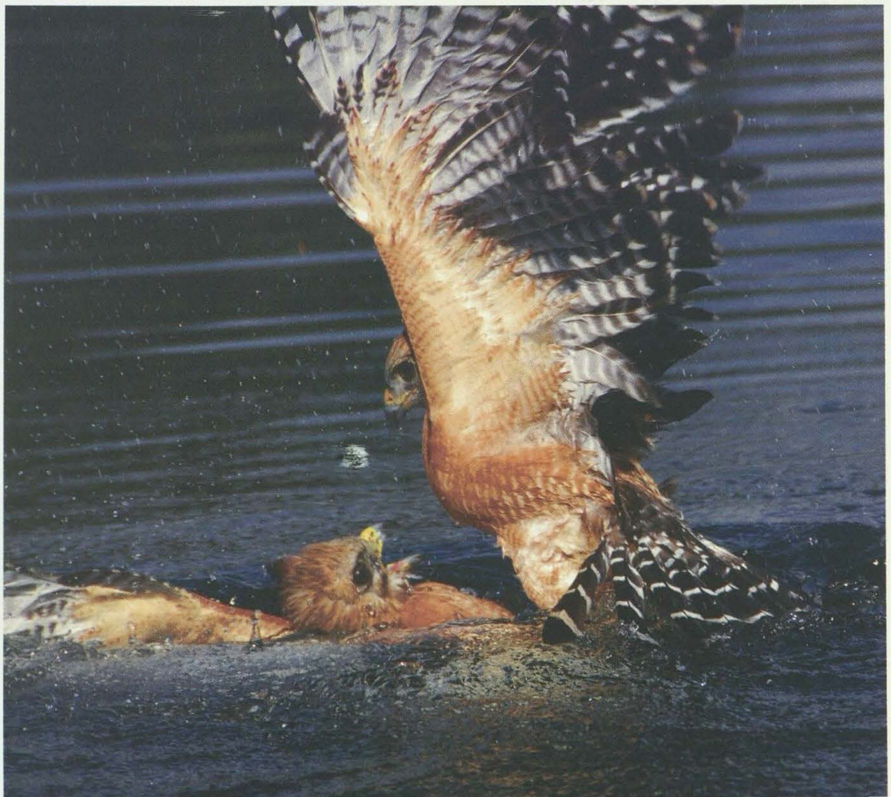
While both hawks were mature, we guessed the hawk with the brushy head was younger and the one with the combed-back look might be slightly older.

When one seemed to run out of energy, the other would rear up and punish it. Sometimes both would attack at the same time. This went on for about 10 minutes, and the two birds



Right and left: *Two hawks battle each other after falling in the water.* **Above:** *The older hawk rests in the author's boat.* **Bottom, left:** *The younger hawk is lifted from the water on a paddle.*





became waterlogged, sinking deeper into the water.

When the older hawk sank its talons around the younger bird's eye, we decided to separate them with a paddle by lifting up from below. The older hawk rested in the boat, and I actually stroked its back while taking pictures. Suddenly, it flew up and landed on my head, which was protected only by a baseball cap, causing me some alarm. It gave me a reassuring squeeze with its talons, not too hard, and then flew off, landing on a nearby lake house.

We then lifted the younger bird from the water with a paddle. While I took a couple of photos, the same hawk or another (there were two overhead) swooped down and knocked it from the paddle, only 3 feet in front of me. Again, we scooped up the motionless, soggy hawk and boated over to an elderly couple watching from their dock. I offered to deliver the hawk to the University of Florida veterinary school for rehabilitation, but the couple wanted to take care of it.

The younger bird was pretty beat up and shivering from being in the water for so long. I'm not sure if it survived. At any rate, we were not inclined to watch two fine hawks drown right in front of us. FW

To rescue or not?

Most people, when seeing a wild animal that appears injured or abandoned, instinctively want to help it. However in many situations, attempting to help the animal may cause it more injury than simply leaving it as it is. Most animals also have defense mechanisms, such as teeth and claws, which they may use on their human rescuers, not understanding the person is trying to help.

Joe Richard is lucky the hawk landing on his head did not seriously injure him with its talons. It could have easily raked open his skin or clawed his eyes. Fortunately, this story seems to have had a happy ending.

"I was not a witness to how badly the birds were struggling to survive and it is possible one may have died. Most combats in the animal world end when one of the combatants gives up and leaves. Usually, it is only humans who fight to the death" writes FWC employee Eddie White. "These birds probably would have ended their fight and both survived without human intervention. The one on the bottom seems to be getting the worst of it, but he has his head above water and is still putting up a fight. When one quits fighting, it is usually over. The writer was able to 'rescue' the hawks only because they were exhausted from combat."

If you think an animal needs rescuing, call your regional FWC office or wildlife rehabilitation center. If the animal is in immediate danger and you decide to try to rescue it, take precautions. If it can move, try to guide it to a place of safety. Do not try to handle it with your bare hands. Try to capture it in a box or other container or wrap it in a blanket or other material. Take it to a trained and permitted wildlife rehabilitation specialist or center as quickly as possible. Wild animals can die from the stress of being handled or contained. The average person does not have the knowledge, skills or equipment necessary to help injured wildlife. Plus, it is unlawful to possess many species without special permits, even if you plan to return one to the wild in a couple of days.

FWC sorts through rule proposals at Sandestin

The FWC met Feb. 4 and 5 at Sandestin. During the meeting, Commissioners voted on new rules for Florida's quota hunt system and changed some marine fishing regulations.

The Commission also approved new season dates and regulations for public hunting lands within the Kissimmee Chain of Lakes and Babcock Ranch Preserve.

In other marine fisheries action, Commissioners proposed a draft rule that would establish administrative penalties for blue crab management program violations and reviewed and discussed management of flounder and various federal fisheries management issues.

Updates from the April 15-16 Commission meeting in Tallahassee will appear in the July/August issue. The FWC will meet again June 17-18 in Crystal River.

FWC changes Gulf red snapper sport season

The FWC has approved a rule that changes the recreational harvest season for red snapper in Gulf of Mexico state waters. This action means that Florida's Gulf red snapper recreational harvest season will match the currently established season in Gulf federal waters.

The sport harvest season for red snapper in Gulf state waters will be open from June 1 through Sept. 30. Previously, the season in Gulf state waters occurred from April 15 through Oct. 31.

"Red snapper are considered to be overfished and undergoing overfishing in the Gulf," said FWC Commissioner Dwight Stephenson. "Shortening the fishing season in Gulf state waters will help rebuild red snapper populations and hopefully minimize the need for further fishing restrictions."

FWC makes changes to WMA quota system

At its meeting in Sandestin, the seven members of the FWC voted in favor of proposed recommended changes to its Wildlife Management Area Quota Hunt Permit Program. An amendment to the new rules provides that the changes will no longer be in effect after 2012, unless the Commission reauthorizes these changes or approves an extension.

FILE PHOTO

For more than a year, a Quota Hunt Stakeholder Working Group worked on developing a new set of rules to improve the state's regulation of hunting on WMAs.

For more than a year, a Quota Hunt Stakeholder Working Group, consisting of FWC staff and members of the hunting public, worked on developing a new set of rules to improve the state's regulation of hunting on WMAs. Public meetings also were held throughout the state, and much input was received on how to make the quota permit system better.

The changes are needed to improve hunter recruitment and retention and more fairly distribute public hunting opportunities.

Under these new rules, which become effective for the 2009-10 hunting season, all quota permits will now be nontransferable, including those for mobility-impaired hunters. The only exceptions are on Holton Creek WMA and for deer dog hunts on Blackwater WMA, where there will be no changes.

Florida was the only state in the country that previously allowed its big-game quota permits to be transferred from one person to another.

"It is time to improve the system and become consistent with other states," said FWC Chairman Rodney Barreto. "We are looking forward to working with our stakeholders on continued improvements of our system."

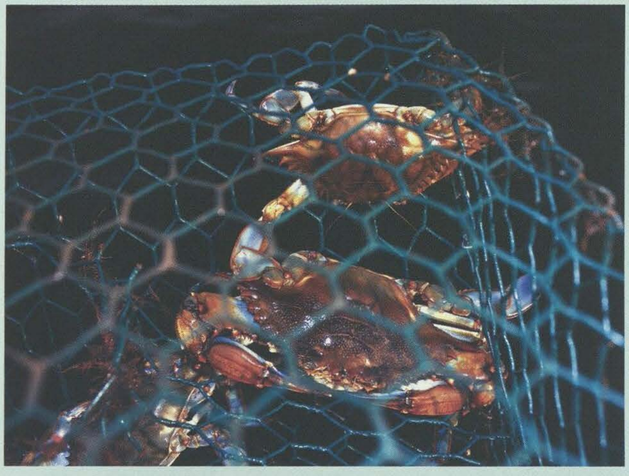
Besides making quota permits nontransferable, the rules give hunters more choices for more types of public hunts. For hunters who like to use bows and muzzleloaders, they will now be able to put in for five archery hunts and five muzzleloading gun hunts, as opposed to only five archery or muzzleloading gun hunts. And with the increase in people wanting to hunt wild hogs, the rules allow hunters five choices for hog hunts, and they still have the ability to apply for five general gun hunts (for deer and wild hogs) as well.

The rules also establish a new guest permit, whereby a quota permit holder can take someone hunting with him, if that person applies under the quota permit holder's customer ID number.

Stipulations of the guest permit require that the quota permit holder and his guest enter and exit the WMA together, share the same vehicle and share a single bag limit. In addition, the quota permit holder must be on the area when the guest is hunting, and in cases where a WMA has zone tags, both people must hunt in the same zone.

Because of the current number of hunters permitted on certain hunts and to allow for the addition of the new guest permit, the rules reduce some of the established quotas on only eight of the 105 WMAs with quotas. Those WMAs are Croom, KICCO, Hickory Hammock, Upper Hillsborough River, Andrews, Twin Rivers, Joe Budd and Dexter/Mary Farms.

Blue crab closed seasons approved to aid cleanups



JOE RICHARD

Blue crabs are common throughout Florida and are popular in both recreational and commercial fisheries.

The FWC approved a rule on Feb. 5, that will establish six regional closed seasons to the harvest of blue crabs with traps. These closures will extend for a period of up to 10 days each to help efforts to identify and retrieve lost and abandoned blue crab traps from Florida waters.

Lost and abandoned blue crab traps have been cited as a problem in the blue crab fishery because they sometimes interfere with other fishing activities and can continue to trap crabs and fish when they are not maintained. They can also be unsightly in the marine environment, damage sensitive habitats and pose navigational hazards to boaters.

It is illegal to tamper with properly licensed and maintained blue crab traps. Lost and abandoned traps cannot easily be distinguished from legal traps, so they often remain in the water indefinitely. Regional closures to the blue crab trap harvest of up to 10 days will allow authorized groups to collect lost and abandoned traps that remain in the water during the closed periods.

The new rule prohibits the harvest of blue crabs with traps in:

- All waters of the St. Johns River system from Jan. 16-25.
- All other coastal waters from the Georgia-Florida state line south through Volusia County from Aug. 20-29.
- All waters of Brevard through Palm Beach counties from Aug. 10-19.
- All waters of Broward through Pasco counties from July 10-19.
- All waters of Hernando through Wakulla counties from July 20-29.
- All waters of Franklin County to the Florida-Alabama state line from Jan. 5-14.

Except for the St. Johns River system closure, all of the proposed blue crab trap harvest closures will extend from the shoreline out to 3 nautical miles and include all inland waters in the regions. An existing Sept. 20-Oct. 4 blue crab trap closed season in the Gulf of Mexico from 3 to 9 miles offshore will remain in effect.

The closures will apply only to standard blue crab traps. The harvest of blue crabs by other gear, such as dip nets and fold-up traps, will still be permitted during the closures. The closures will also apply to recreational harvesters who use standard blue crab traps unless the traps are attached to private property.

This rule takes effect on July 1.

FWC explores ways to improve its nuisance wildlife rule

The FWC will examine and consider changes to the agency's nuisance wildlife rule, said Executive Director Ken Haddad at the Commission's meeting in Sandestin on Feb. 4.

One component of the rule that went into effect July 1, 2008, states that nuisance wildlife, if trapped, may be transported only for purposes of euthanasia, or the animal may be released alive on site.

In January, a bobcat was trapped in a residential area near Orlando by a nuisance wildlife trapper. Under the nuisance wildlife rule, the animal was subsequently euthanized.

"Concerns raised by the public and our commitment to continuously improve our policies led to the decision to explore the possibility of revising the rule," Haddad said.

Other animals affected by this rule include armadillos, foxes, raccoons and coyotes.

"We have opened dialogue with key stakeholders to find an acceptable level of flexibility to our rule," Haddad said. "We are currently considering several options and will bring back any proposed rule changes at a future Commission meeting."

ROBERT J. LA FOLLETTE

The armadillo, a nonnative, is often considered a nuisance animal because of its habit of digging holes and burrows in landscaped areas. It digs in search of prey – earthworms and grubs – and to create underground areas to live and raise young.

FWC amends lobster traps rule

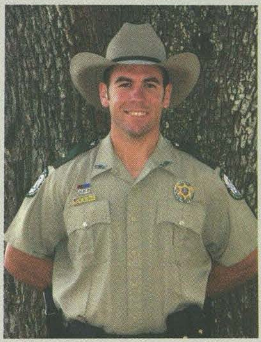
The FWC has approved a rule amendment to help reduce the number of traps that can be used in the commercial spiny lobster fishery.

The rule change will end a five-year moratorium on the reduction of lobster traps in Florida. However, the number of traps will be reduced only when a commercial lobster harvester decides to sell or transfer his FWC-issued trap certificates to someone outside his immediate family. The new rule will allow the harvester to sell or transfer all but 10 percent of those certificates.

"This will help decrease the total number of traps used in the lobster fishery and benefit both the fishery and the sensitive South Florida habitats where lobsters are harvested," said FWC Chairman Rodney Barreto.

The new rule amendment takes effect on July 1.

FWC's 2009 Officer of the Year operates above the call of duty



FWC FILES

He pulled a woman from a burning car and saved her life. He's assisted in capturing a suspected murderer. He's arrested people for night hunting, illegal fishing, littering, drug possession and active felony warrants.

And now, Officer Bret Gill has been selected as the 2009 FWC Division of Law Enforcement Officer of the Year.

In 2005, Gill started his career with the FWC in Union County.

"He has earned the respect of the citizens he serves through proactive and responsive law enforcement services and hard work," said Capt. Roy Brown, area supervisor. "Officer Gill possesses a uniquely patient investigative style that has proved very successful. If he catches a whisper of a possible resource violation, he doggedly pursues all leads, leaving no stone unturned."

The variety of Gill's impressive caseload further demonstrates his initiative and ability to get the job done, Brown explained.

Gill was traveling to Tallahassee for Special Operations Group (SOG) training when he saw two Florida Highway Patrol troopers attempting to arrest a subject who was violently resisting, Brown said. One trooper's hand was broken during the fray, and Gill's assistance made the difference in gaining control of the situation.

"Officer Gill assisted the Union County Sheriff's Office with a manhunt for a murder suspect. After tracking the suspect for over a mile, he and a Department of Corrections K-9 officer captured the suspect," Brown said.

The officer also works complaints from landowners. Gill received a complaint from Plum Creek Timber Company about illegal dumping on its lands. Gill investigated the complaint and charged a suspect with felony littering.

"During the Fourth of July holiday, Officer Gill, accompanied by Officer Billy Giles, successfully rescued four children who were tube-floating down the Santa Fe River after they became separated from their parents. The officers located the kids several miles downriver and returned them to their very appreciative parents," Brown said.

The new officer of the year thrives on being in the woods. Gill arrested three subjects night hunting who had a doe deer in their possession. He was then able to learn through a thorough interview that the trio had killed another doe and had left it in the woods down the road. The landowner was very appreciative, as he had been experiencing ongoing problems with illegal hunting.

Gill also saved a life. On July 18, the officer was off duty, traveling through Lake Butler, when he saw a woman running toward him. She told him about a vehicle that crashed and was on fire down the street.

Gill found a pickup truck that had struck a power pole and was on fire. He called 9-1-1 for assistance and then ran through a crowd of spectators to the blazing vehicle to find the driver pinned in the vehicle, burning.

Gill determined the driver was dead. He then went to the passenger side and found a woman alive, gasping for air, and flailing about the cab. Her legs were on fire. Gill forced the door open and pulled her out of the burning vehicle. He then rolled her on the ground repeatedly to extinguish the flames.

As Gill was doing what he could to aid the victim, the vehicle exploded.

"Apparently, the gas tank and ammunition stored in the truck exploded," Brown said. "There were several bystanders who said they wouldn't have thought of going near the truck because they knew it was going to explode."

The woman was flown to Shands Burn Center in critical condition.

In the days following the accident, the victim, Michelle Davis Brannen, 28, of Macclenny, underwent surgery to amputate both her legs. She continues to improve and make progress toward recovery.

"Michelle, her family and community have repeatedly thanked Bret for his actions,," Brown said. "His actions were above and beyond the call of duty and deserved special recognition. Officer Gill was awarded the Medal of Valor with Lifesaving Commendation.

"Officer Gill has gained the respect of his supervisors, co-workers and the constituents he serves as a very capable and professional law enforcement officer," Brown said. "I'm proud that he's part of our team."

Commission honors excellence in fish and wildlife conservation

The FWC began its two-day meeting in Sandestin Feb. 4 by recognizing the work of a recently retired employee, presenting a prestigious conservation award and acknowledging the contributions of a Panhandle wildlife artist.

Ed Moyer spent 35 years with the FWC (formerly the Florida Game and Fresh Water Fish Commission) before retiring in 2008 as the assistant director of the Division of Habitat and Species Conservation. During his long career, Moyer began the first lake enhancement project on the Kissimmee Chain of Lakes and was instrumental in updating and building the FWC's two fish hatcheries. He worked tirelessly with the agency's legislative staff to secure appropriations for lake restoration and construction of the Florida Bass Conservation Center.

FWC FILES

Carol Knox received the Louise Ireland Humphrey Achievement Award for her work with the Manatee Management Program at the Florida Fish and Wildlife Conservation Commission meeting in Sandestin Feb. 4.

The Wildlife Foundation of Florida presented the Louise Ireland Humphrey Achievement Award to Carol Knox, the FWC's Manatee Program administrator.

"We are so pleased the Wildlife Foundation of Florida can recognize such a wonderful, professional person with this award," said Daphne Wood, chairman of the foundation. "Carol is truly dedicated to manatee conservation, and she has led recovery efforts with an uncommon spirit of cooperation and creativity."

Each year, the Wildlife Foundation of Florida honors former Game and Fresh Water Fish Commission Chairwoman Louise Ireland Humphrey by recognizing an FWC employee whose dedication and service has made a significant contribution to protection and conservation of Florida's fish and wildlife.

Ken Haddad, executive director of the FWC, presented the award for the foundation and recognized Knox's career, which has involved three state agencies: the Department of Natural Resources, the Department of Environmental Protection and the FWC. Knox joined the West Indian Manatee Management Program in 1991, which led to her appointment as the FWC's program director for manatee management.

Under her careful watch, Florida's manatee conservation program has been recognized internationally as a model for marine mammal conservation. Haddad praised Knox's ability to garner consensus and cooperation from diverse stakeholder groups regarding the often-controversial and highly visible manatee issues.

The Commission also recognized artist Bill Adair of Gulf Breeze for his depictions of wildlife. Adair believes that "art begins where nature ends." Through his paintings, he hopes the viewer will walk away with an interest in learning more about the subject matter. He has received awards for his work from the Florida Chapter of the National Wild Turkey Federation and Ducks Unlimited and many other wildlife organizations in Michigan, where he lived before moving to Florida.

Free hunter safety courses offered

Don't wait... get educated early by attending one of the FWC's free hunter safety courses.

Although hunter safety courses are offered in every county throughout the year, FWC volunteer instructors are hunting like everyone else during the season, so classes are limited after October.

"It's a good idea to take a course early in the year. Classes offered later fill up quickly, and it may be difficult to enroll in a class close to hunting season," said Steve Robbins, regional hunter safety coordinator.

Some are traditional classes, and some are online/CD courses. To register, visit the Hunter Safety area of MyFWC.com or call a regional FWC office.

All firearms, ammunition and materials are provided free of charge. Students need to bring a pen or pencil and paper.

"The FWC Hunter Safety Course is now available online and on compact disc," Robbins said. "Hunters can take a majority of the classroom instruction without leaving home before taking part in a field day that includes live-firing instruction on a shooting range to earn certification.

"At the field day, students must complete a standard written examination and are expected to demonstrate many skills, such as loading and unloading different types of firearms, safely crossing fences and other activities that all safe, responsible hunters should be able to complete," Robbins said.

The interactive Internet and CD-ROM courses were developed as a means of increasing accessibility to hunter safety programs. Field days are offered throughout the state. The traditional classroom courses are offered in all 67 of Florida's counties.

Families with young children are encouraged to attend a traditional course. Student interaction with the instructors may assist the child in better understanding the course content, and the instructor can answer student questions that cannot be accomplished with the online or CD versions.

Students who wish to complete the alternative course using the CD-ROM method will need to contact the regional office at least two weeks prior to the scheduled course field day. A CD-ROM with instructions will be mailed at the student's request.

DAN MAROTTA

New rules approved for harvest of aquarium species

The FWC has approved a series of rule amendments for the marine life (aquarium species) fishery. These rules are intended to enhance the FWC's existing marine life regulations to help maintain the health of Florida's important coral reef ecosystem.

Several species will be added to the marine life rule, which means that commercial harvesters of these species will need a marine life endorsement to collect them, and these species also will be included in the marine life recreational bag limit. The added species include porcupine fish, spotted burrfish, black brotula, key brotula, yellow stingray, blackbar soldierfish, red mithrax crab, emerald crab, red ridged clinging crab, the star snail lithopoma tectum, all hermit crabs (except land hermits), and nassarius snails.

The new rules will allow recreational harvesters to take no more than five of any one marine life species daily within the 20-organism aggregate bag limit and possess no more than a two-day bag limit (up to 40 marine life organisms).

In addition, the new rules will raise the maximum size limit for butterflyfish from 4 to 5 inches total length and establish maximum size limits of 9 inches total length for tangs and 12 inches total length for parrotfish for all marine life harvesters, change the daily commercial bag limit for butterflyfish from 75 per vessel to 50 per person or 100 per vessel (if two endorsement-holders are aboard), and establish a commercial daily vessel limit of 400 for dwarf seahorses.

The new rules also will lower the commercial daily bag limit for condylactis anemones from 400 per vessel to 200 per marine life endorsement holder on a vessel, and establish commercial daily bag limits of 400 per vessel for emerald crabs, 1 gallon per person and 2 gallons per vessel for lithopoma tectum (added to the current star snail bag limit), and 1 quart per person and 2 quarts per vessel for scarlet reef hermits.

Other new rules specify that all marine life harvesters must take ricordea (a soft coral) and all corallimorph polyps as a single polyp only. Rules establish a commercial daily bag limit for all corallimorph polyps of 100 polyps per person or 200 per vessel (if two endorsement-holders are aboard). A commercial daily bag limit will also be established for zoanthid polyps of 1 gallon of polyps per person or 2 gallons per vessel (if two endorsement-holders are aboard), and the only gear allowed to be used by all marine life harvesters for collecting zoanthid and all corallimorph polyps is a flexible blade no wider than 2 inches, such as a paint scraper, putty knife or razor blade.

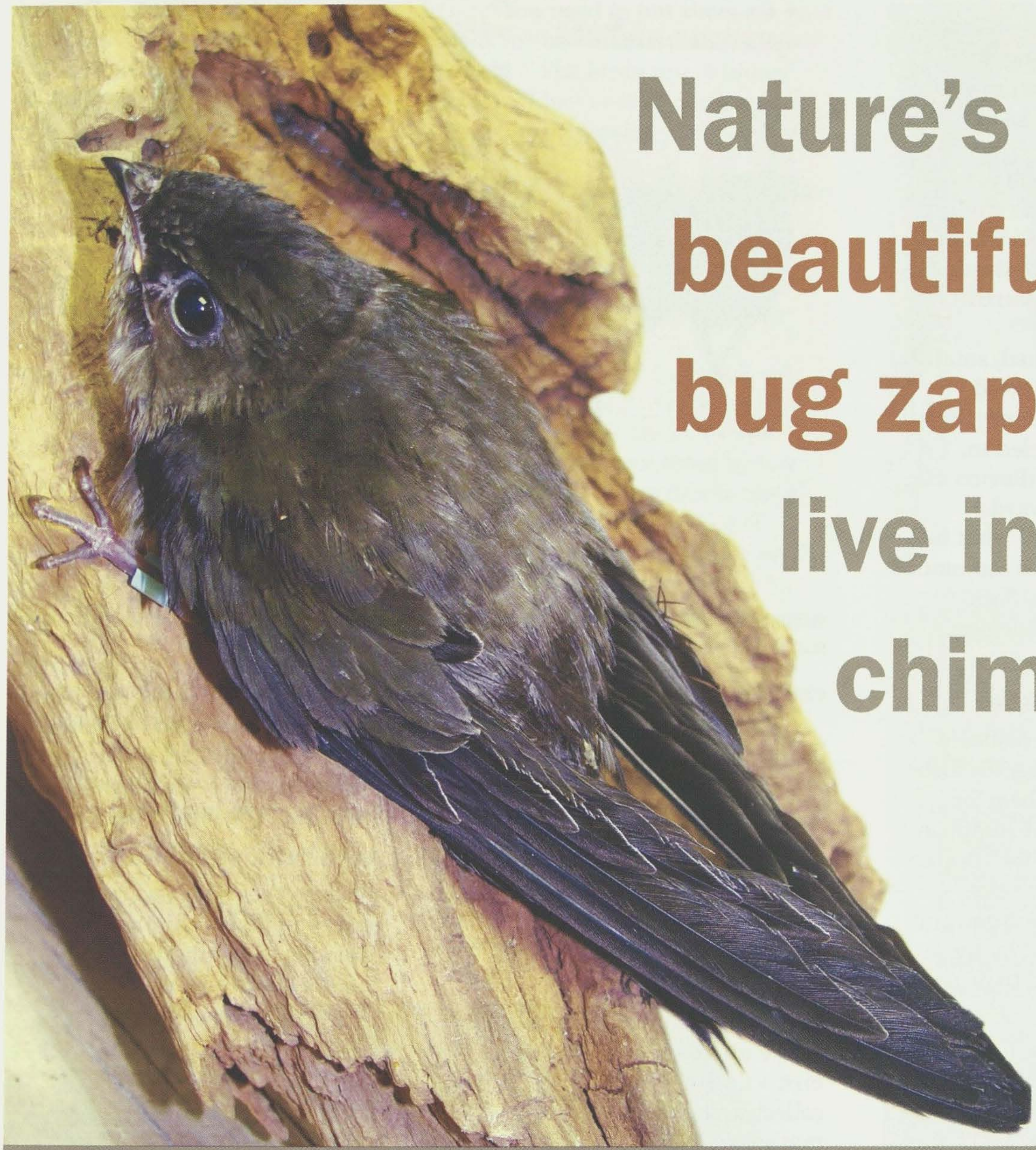
The new rules also will allow the harvest of ornamental sponges north of Egmont Key in the Gulf of Mexico to be taken with a 1-inch amount of substrate beyond the holdfast and a 1-inch thick piece of substrate below the holdfast of the sponge. Taking ornamental sponges with substrate will not be allowed in waters south of Egmont Key.

Finally, the new rules will allow live rock harvest from an aquaculture lease site to count toward the requalification of the marine life transferable dive endorsement, restrict quinaldine use to marine life dive and non-transferable dive endorsement holders only, and apply other technical rule changes.

The rule amendments take effect July 1. FW

***Above:** The porcupinefish gets its name from the spines covering its head and body. It inflates its body by taking in water when threatened. **Below:** The color of the stoplight parrotfish changes as it grows, and it may change sex from female to male as well.*

SHAUN GILL / NCRI



Nature's beautiful bug zappers live in our chimneys

Article and photographs by Sandy Beck

One spring, about 1835, John James Audubon arrived in Louisville, Ky. "The town contained about a hundred houses – hardly a city..." he wrote.

While walking through nearby woods that evening, he discovered an old sycamore snag, 60 or 70 feet high and 7 or 8 feet in diameter at the base.

"As the sun was going down,... thousands of (American) swifts flew close above me. Three or four at a time were pitching into the hole (at the top of the tree) like bees into a hive."

Audubon returned the next morning before daylight to see the swifts pouring out in a continuous black stream. He estimated that it took more than 30 minutes for approximately 9,000 birds to exit and instantly disperse in every direction.

By September, the birds were gone. But the swifts returned to the same tree each spring for the next five years, until it toppled in a storm.

Closer to home

One cool spring evening, a friend, walking in downtown Tallahassee, thought he saw a swirling tornado.

The tornado turned out to be a large flock of birds circling above the roof of an old church. They were all flying in the same direction, above the church's chimney.

As dusk approached, small groups of the birds started dropping into the chimney. Soon, the entire flock funneled in, creating the strange illusion of smoke curling downwards.

My friend realized what he had witnessed was the communal roosting behavior of a flock of chimney swifts (*Chaetura pelagica*).

Adaptable aerialists

Before the American pioneers flattened forests for agriculture and loggers cleared them for lumber, the birds that Audubon called "American swifts," nested and roosted in hollow trees.

Luckily, the large stone and clay chimneys erected by those same pioneers proved to be an excellent alternative.

Ranges of these adaptable birds, renamed "chimney swifts," expanded and their numbers soared as urban settlements grew.

These little "arrows," with long, curved wings, are among the world's most graceful and swiftest flyers. Their rapid, flickering wingbeats alternate with long, fluid glides.

They also spend more time in the air than any other land bird – feeding, drinking, bathing, collecting nest material and mating on the wing.

This airborne life is necessary because the swifts' legs are so small and weak that perching, walking or even taking off from the ground would be difficult.

Their strong feet, however, more than compensate. Equipped with four forward-facing claws, they cling to vertical surfaces – like the insides of hollow trees, abandoned buildings and chimneys. The shafts of their short tail feathers project as stiff spines to provide additional support.

Chimney swifts are small (about 5 inches from head to tip of tail), sleek and grayish-brown with pale gray throats, chins and cheeks. Their loud, rapid and high-pitched chittery calls are easy to recognize. Some think of them as swallows or little purple martins. In fact, they may be more closely related to our other tiny aerialists, the hummingbirds.

Wildlife rehabilitation centers rescue thousands of orphaned baby chimney swifts each summer. Learn how to help them at www.chimneyswifts.org.

Build and they will come

If you already have chimney swifts nesting in your chimney, consider yourself lucky. If not, you can create a suitable habitat for them by improving an existing chimney or by providing an artificial one.

Several "artificial chimney towers" have been erected in Texas. All reportedly attracted nesting pairs of swifts the very first year. A few have been used as communal roosts.

If you are interested in constructing a swift tower and would like building plans, contact Paul D. and Georgean Z. Kyle, project directors of the Driftwood Wildlife Association's North American Chimney Swift Nest Site Research Project, at 1206 West 38th, Suite 1105, Austin, Texas 78705, or www.chimneyswifts.org.

Acrobatic pest control

Because they spend so much energy in flight, chimney swifts consume huge quantities of insects. Each bird is believed to snatch thousands of insects from the air each day, including mosquitoes, beetles, flies, ants and termites.

Chimney swifts winter in South America. In the spring, they migrate north to nest and spend their summers in North America, from the East Coast to the foothills of the Rockies.

In Florida, the spectacular roosting behavior that both Audubon and my friend observed begins in March when the birds return.

After a period of colonial roosting, mated pairs leave to find their own nest sites. But if the chimney is large enough, several pairs, or even the entire colony, may decide to stay together and nest in a communal "condo."

Once they choose a nesting site, these little acrobats fly against small, dry twigs, snap them off and then catch them in their feet.

Back in the chimney, they form these twigs into a half-cup, glued to the inside wall with gelatinous saliva. The birds may work on this nest for two to three weeks.

They lay their clutch of four or five eggs in June. Both parents incubate the eggs for 20 days, and the young are able to fly when they are 30 days old. Unlike most fledglings, they can catch their own insects as soon as they can fly.

Baby chimney swift month

Every July, Florida's wildlife rehabilitators and nature centers receive hundreds of calls like this one:

"I heard this chirping in my chimney so I opened the flue. Two small birds zipped out and flew around the house until I caught them with a butterfly net.

"After I put the birds in a shoe box, I heard more noises in the chimney. So, I shined a flashlight up the shaft and saw some sooty baby birds on the chimney wall. I put the poor little things in another box. How did the birds get stuck in my chimney? What should I do?"

"You need to put them all back in the chimney," the caller is told. "The birds are chimney swifts. They nest in chimneys in the summertime then fly south by September.

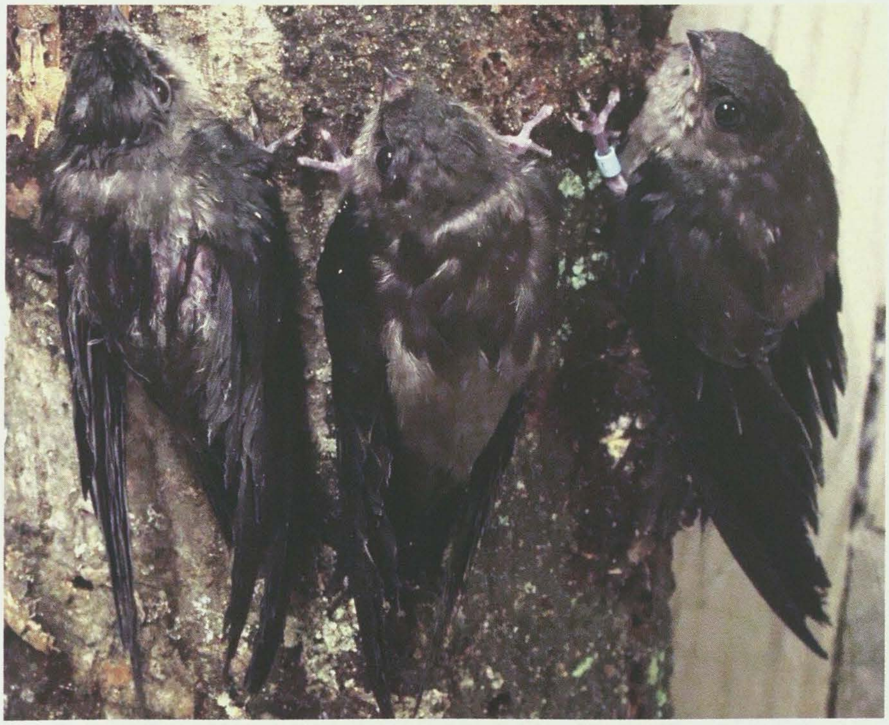
"The nests won't damage your chimney, and the babies' calls will last only a couple of weeks, until they begin to fly. After that, they'll just use the chimney for roosting at night.

"During the day, they'll eat millions of flying insects around your house, and the birds and their nests are protected by law."

Because of a switch to metal chimneys and the practice of capping chimneys, chimney swift roosts are becoming scarce.

So, this summer, when shadows lengthen and the birdsong thins, put out the welcome mat for nature's little bug zappers. FW

Sandy Beck is a freelance nature writer and education director of The Wild Classroom in Tallahassee, which uses disabled raptors from the St. Francis Wildlife Association to bring children closer to nature. Contact her at www.wildclassroom.net.



Three juvenile chimney swifts at the St. Francis Wildlife rehabilitation hospital in Havana. Their four forward-facing claws, cling to vertical surfaces – like the insides of hollow trees, abandoned buildings and chimneys.

Orphaned baby chimney swifts are fed crickets at the Wildlife Sanctuary of Northwest Florida in Pensacola.

How you can help chimney swifts

- If you have a real stone or brick fireplace, keep the top open and the damper closed from March through September. The birds will be long gone before you start any fires.
- During nesting season, pack a large piece of foam rubber or plastic foam into the opening. During heavy rains, humidity may weaken the nest, causing it to become unglued and fall. The foam will cushion the fall, and the parents will continue to feed the babies.
- You'll know if you have chimney swifts by their aerial acrobatics around your house and the chattering in the chimney. The foam will also muffle the babies' calls.
- Either early March or October is the best time to get your chimney cleaned. This will keep your fireplace safe for you and provide a better surface to which the nests can adhere.
- If you have a metal chimney, make sure it is properly capped throughout the year. Animals that enter metal chimneys are unable to climb the slippery walls and fall to the bottom.

Good shots help others

Annual FWC photography contest raises money for the Florida State Employees' Charitable Campaign

Four years ago, the Florida State Employees' Charitable Campaign planning committee came up with the idea to create an employee photo contest with an entry fee that would contribute to the worthwhile campaign. The planning committee developed categories, rounded up judges and the fun began.

In 2008, FWC employees and family members entered more than 100 photographs. Here are the winners in three of the categories.

First Janessa C. Cobb
Seafoam Sunset on Sunray Venus

Second
Janessa C. Cobb
Flowing Smooth

Third
Kimberly H. Chason
Cypress Reflection

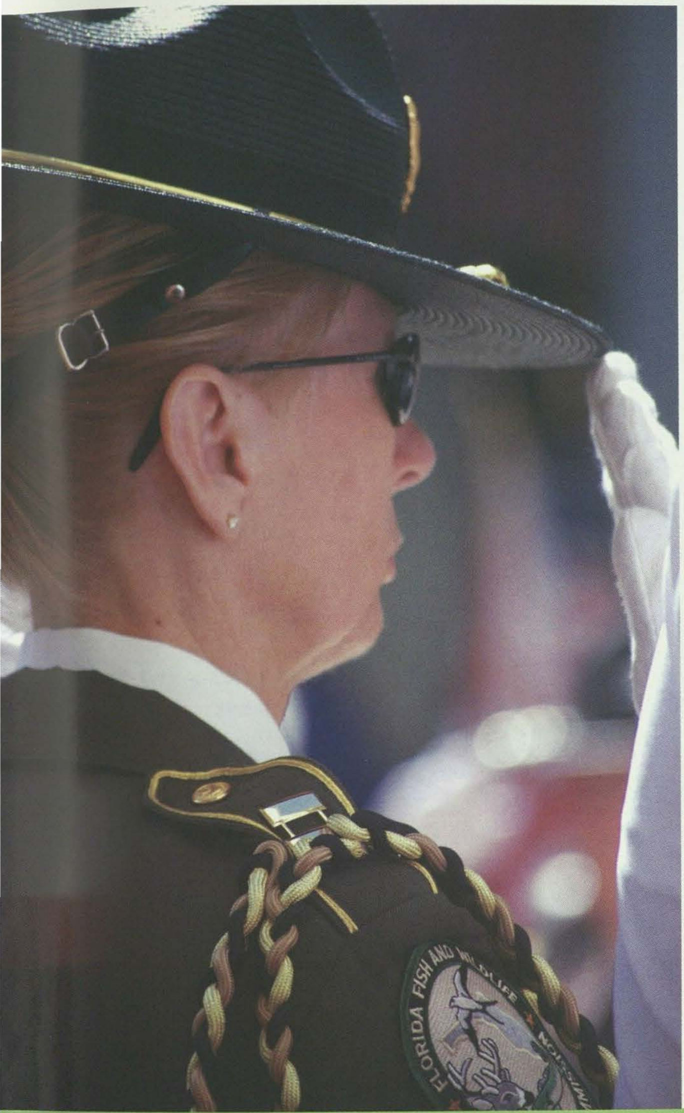
Florida's Native Habitats/Scenery

First Tom Reinert
Great Blue Heron

Native Wildlife of Florida

Third Missy Juntunen
Everglades Fawn

Michael Colella
Juvenile Blue Angelfish Second



First

Jessica Basham
Somber Salute

Third

Boyd Thompson
Aquatic Plant Survey

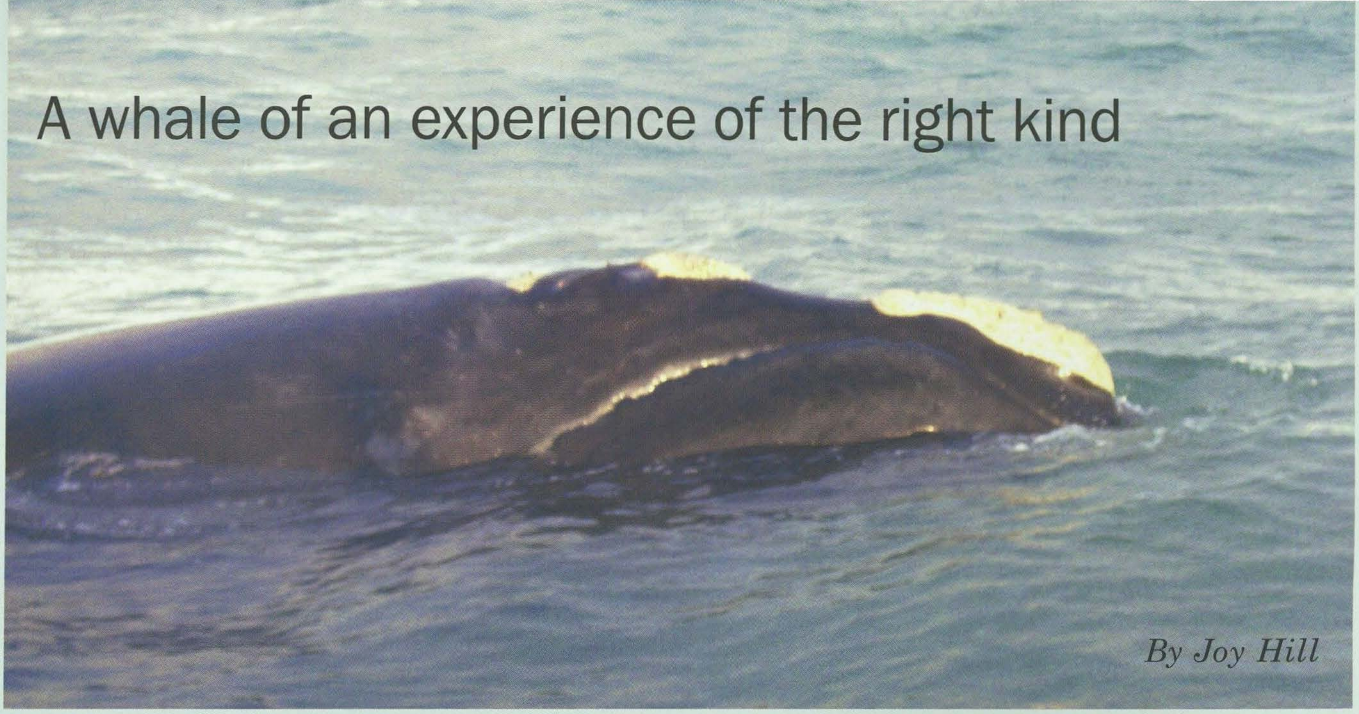
Think FWC

Second

John Cimbaro
Airboat Ride

A whale of an experience of the right kind

By Joy Hill



OFFICER KRIS CULVER

On February 7, FWC Lt. Randy Bowlin and FWC officers Curtis Suggs and Kris Culver responded to a call that boaters were possibly getting too close to a North Atlantic right whale that was swimming offshore from the Sebastian Inlet in Indian River County. Federal law prohibits approaching a right whale closer than 500 yards. There are limited exemptions to this rule, including one allowing wildlife law enforcement officers to provide a close escort when whales are in ship channels or surrounded by boats.

When the officers arrived they didn't find anyone too close to the whale; instead they saw several boaters enjoying its social display. However, the officers' appearance may have stopped any of the boaters from trying to get closer to the marine mammal. The whale's show went on for nearly half an hour, thrilling boaters and officers before it decided it was time to leave, which it did without incident.

"I've never seen anything like that before," said Officer Suggs. "That was definitely a once-in-a-lifetime opportunity for most people."

During the display, the officers took photos of the whale to help marine biologists identify it. Whales have markings that are specific to each individual and biologists like to keep tab on them when possible.

Members of the Volunteer Sighting Network helped with this sighting and Katie Jackson, a marine mammal biologist with the FWC, was able to identify the whale.

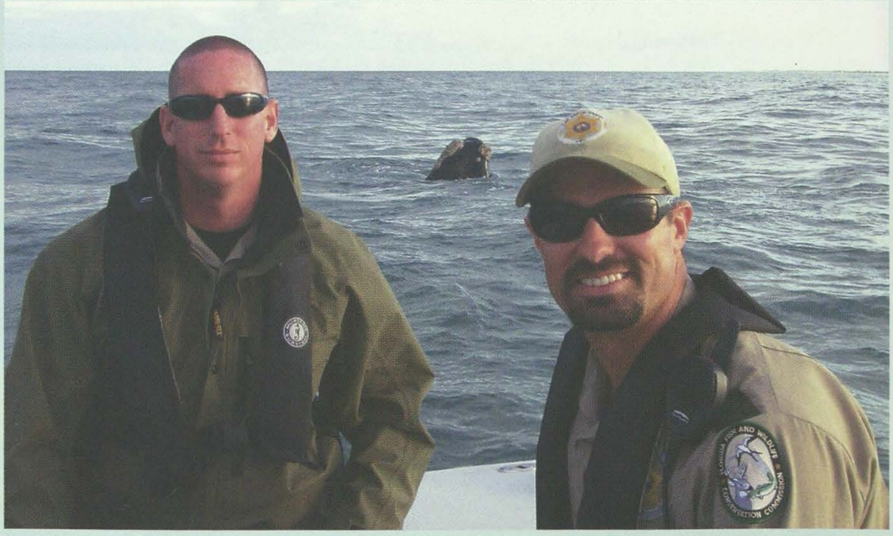
The North Atlantic right whale, *Eubalaena glacialis*, is one of the most endangered large whales in the world, facing a high likelihood of extinction largely because of human activities. About 300-400 animals remain of the western North Atlantic population, which is commonly found off the East Coast of the United States and Canada.

Whalers labeled these animals "right whales" because they considered them the "right" whales to hunt. They swam slowly in coastal waters, floated when dead and yielded large amounts of oil and baleen. Right whales had been hunted to near extinction when hunting was finally banned in 1935.

Although whaling is now illegal, right whales are still strongly affected by human activities. Approximately 30 percent of all mortalities result from collisions with large vessels or entanglement in fishing gear.

Florida takes a special interest in right whales because their only known calving ground is located off the coasts of Georgia and Florida. From approximately December through March, pregnant females migrate from their northern feeding grounds to the sheltered waters of the calving ground to give birth to their young.

Anyone spotting a right whale should report the sighting to the United States Coast Guard via marine radio channel 16, or via phone to the FWC at 1-888-404-FWCC (3922). FW



OFFICER KRIS CULVER

***Above:** Lt. Randy Bowlin (left) and Officer Curtis Suggs (right) along with Officer Kris Culver (photographer) responded to a call about boaters being to close (within 500 feet) to a right whale. Fortunately, all of the boaters in the area maintained a respectful distance and were treated to a social display by the whale.* ***Top:** Biologists often are able to identify individual right whales by the callosity (roughened patches of skin) patterns on their heads.*

That bunch of seaweed on the beach teems with life

By Patricia Behnke

THOMAS J. DUNKERTON

***Above:** A ghost crab scuttles along a line of beach wrack. **Below:** Least sandpipers feast on the beach wrack washed ashore on Honeymoon Island.*

When walking the beach, pause and ponder the virtues of stranded seaweed. Those scattered clumps along the high-tide line actually have a name – beach wrack – and are a pivotal part of the beach ecosystem.

"Many might think sand makes a beach, but it's the wrack that truly brings a beach to life," said Blair Witherington, an FWC biologist who studies beach life. "It sponsors some of the most appealing things that beaches offer, and it's also the best place to find seashells and other seaborne curiosities."

Beaches can be barren places without wrack because the nutrients, moisture and protection provided by a good wrack line bring unique life to this "desert." Beach wrack is both living room and buffet table for a host of fascinating animals. Look carefully to find swift-footed ghost crabs, pearl-colored beach tiger beetles, or birds, such as ruddy turnstones and the rare piping plover.

Beach wrack consists of sea grass, reeds and marine algae that have drifted at sea before washing ashore, especially after storms. After landing on dry land, beach wrack becomes host to a diverse cast of insects and other tiny invertebrate animals, such as jumping beach hoppers, which are harmless rice-sized crustaceans. The tiny animals, in turn, serve as food for many other creatures.

Migrating shorebirds fly thousands of miles each year to munch on the nutritious meals found in a clump of seaweed. Wrack also provides a safe haven for many animals that escape predators by hiding under it or by blending in with it. A shorebird can "disappear" while napping among the similarly colored shades of seaweed browns and grays.

Beach wrack also is critical to the health of the dunes by providing plant nutrients and stabilizing windblown sand. The wrack carries seeds from many dune plants, such as beach morning glory and sea rocket. As sand builds up and the seeds within the beach wrack take root, new dunes grow.

On some beaches, the sand is machine-raked, new dunes are manicured away and the wrack is removed. These efforts cost taxpayers, but there is a price paid by the beach system as well. A natural wrack line is a key component of a healthy beach ecosystem.

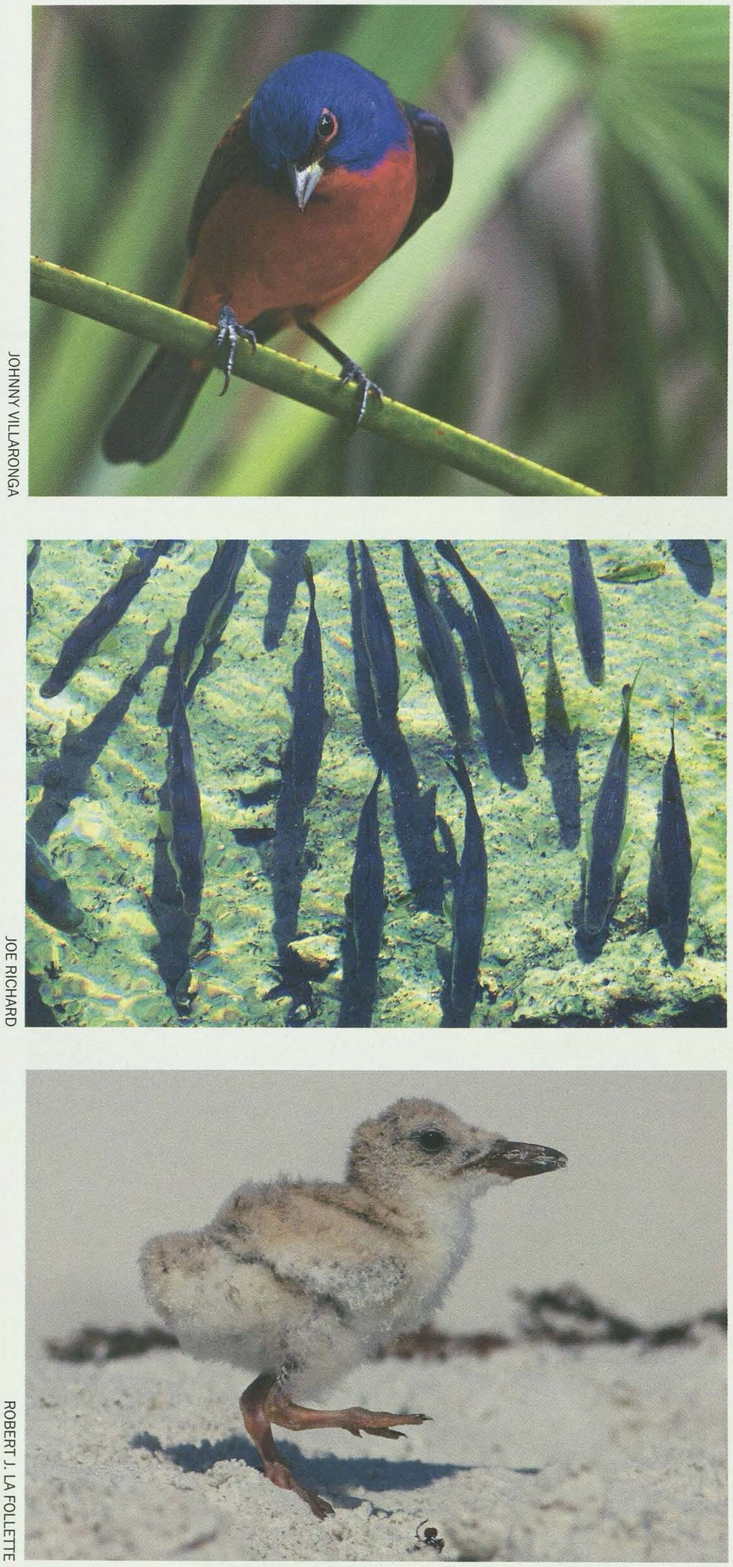
"While a natural beach may not look as manicured as a raked beach, the diversity and richness of a natural, functioning beach is infinitely more interesting than the sterile landscape of one that is groomed," said Nancy Douglass, a biologist who monitors shorebirds for the FWC.

Instead of kicking aside that clump of seaweed on the beach this year, stop and enjoy the huge benefit provided by one small piece of wrack.

"A beach without wrack is like a gallery without art," Witherington said. FW

FWC FILES

Wildlife **Watch**



Top to bottom: *Painted bunting; snook; black skimmer chick*

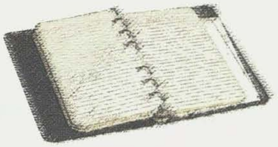
May

- Peak of coyote denning season.
- Red-cockaded woodpeckers are breeding.
- Brown pelican and white ibis young are visible in nests.
- Flathead catfish spawn below Jim Woodruff Dam, Apalachicola River.
- Painted buntings nest throughout the summer in Northeast Florida.
- The last of the cedar waxwings and goldfinches head for northern breeding grounds.
- Most bats give birth now through mid-June.
- Courtship ritual of adult alligators begins, noted by the loud and resounding bellows and water slapping now through June.
- White-crowned pigeons begin nesting on mangrove islands in Florida Bay.
- Redbreast sunfish and spotted sunfish spawn in rivers.
- Green sea turtles begin nesting more abundantly now through September.
- Tropic birds arrive in the Dry Tortugas.
- Pompano are running in the North Florida surf.
- Peak flight month for Schaus swallowtail butterfly in the Keys.
- Bluegill bed during the full moon.
- Breeding begins for many songbirds.

June

- Nesting season for least terns, oystercatchers and black skimmers on islands, beaches and rooftops.
- Red and Seminole bats give birth.
- Leatherback, loggerhead and green sea turtles continue to crawl ashore to lay eggs.
- Snook begin moving out into inlets and passes.
- Female alligators build nests.
- Newly hatched sea turtles head for the ocean.
- Migrating tarpon are found almost anywhere in the Keys.
- Peak month for wildfires, which rejuvenate many Florida plant communities.
- Laughing gulls hatch young on beaches and mangrove islands in Florida Bay.
- Cicadas emerge and begin the song of summer.
- Indigo snakes lay their eggs, sometimes in gopher tortoise burrows.
- Black skimmers hatch their young on beaches.
- Sea squirts spawn on the grass flats.
- Height of the gopher tortoise nesting season.
- Juvenile green sea turtles forage on the ocean's hard bottom close to the southeast coast.
- Most wildlife, including alligators, southern flying squirrels, black-necked stilts and red-cockaded woodpeckers, is nesting.

Event dates and locations subject to change. Contact sponsors for up-to-date information. Visit MyFWC.com for fishing and hunting seasons, dates and deadlines.



Calendar

June

June 1-5: Annual Don Hawley Invitational Tarpon Tournament. Islamorada; 305-664-2444; www.fla-keys.com.

June 1-13: National Week of the Ocean Sea-Son. Ft. Lauderdale; 954-462-5573; www.national-week-of-the-ocean.org.

June 5: Night Hike. Chinsegut Nature Center; Brooksville; 352-754-6722; MyFWC.com/Chinsegut.

June 5-7: Ft. Lauderdale Super Boat Grand Prix. Ft. Lauderdale; 305-296-6166; www.superboat.com.

June 6-7: Tropical Audubon Society Native Plant Sale. Doc Thomas House; Miami; 305-667-7337; www.tropicalaudubon.org.

June 7: Fiesta Sand Sculpting Contest. Pensacola Beach Pavilion; Pensacola; 850-433-6512; www.fiestaoffiveflags.org.

June 10-12: Women's Fly Series. Islamorada; 305-664-4735; www.fla-keys.com.

June 12-13: Island Grill Blue Water Dolphin Tournament. Islamorada; 305-664-8400; www.fla-keys.com.

June 12-13: Big Pine & Lower Keys Dolphin Tournament. 305-872-2411; www.fla-keys.com.

June 13: Florida Skippers Identification. Chinsegut Nature Center; Brooksville; 352-754-6722; MyFWC.com/Chinsegut.

June 13: Early Boat Tour. Edward Ball Wakulla Springs; 850-926-0700; www.floridastateparks.org.

June 13: Kid's Fishing Clinic. Fort Clinch State Park; Fernandina Beach; 850-488-6058; www.floridastateparks.org.

June 13: Elephant Birthday Bash. Central Florida Zoo; Sanford; 407-323-4450; www.centralfloridazoo.org.

June 14-19: Gold Cup Tarpon Tournament. Islamorada; 305-664-2444; www.fla-keys.com.

June 17-18: FWC Commission Meeting. Crystal River; www.MyFWC.com.

June 20: Tropical Audubon Society workday at the Doc Thomas House. Miami; 305-667-7337; www.tropicalaudubon.org.

June 20: Introductory archery workshop. Chinsegut Nature Center; Brooksville; 352-754-6722; MyFWC.com/Chinsegut.

June 20: STA 5 Bird Watching Tour. Clewiston; 863-674-0695; www.floridabirdingtrail.com.

June 20-21: Father's Day Weekend at the Zoo. Sanford; 407-323-4450; www.centralfloridazoo.org.

June 21: Reptile Expo. Davie; 954-473-2955; www.flamingogardens.org.

June 25: Flying WILD workshop for educators. Chinsegut Nature Center; Brooksville; 352-754-6722; MyFWC.com/Chinsegut.

June 26: Summer Safari Nights. Sanford; 407-323-4450; www.centralfloridazoo.org.

June 26-28: Burdine's Waterfront Annual Dolphin & Blackfin Tuna Tournament. Marathon; 305-743-5317; www.fl-keys.com.

June 27: Kid's Fishing Clinic. Cape Canaveral; 850-488-6058; MyFWC.com.

July

July: Dolphin Flashover. Big Pine & Lower Keys; 305-942-7223; www.fla-keys.com.

July 1: Butterflies Plentiful. The Nature Conservancy's Blowing Rocks Preserve; Jupiter Island; 561-744-6668; www.nature.org.

July 3-5: Suncoast Offshore Super Boat Grand Prix. Sarasota; 305-296-6166; www.superboat.com.

July 4: Conch Republic Ladies' Dolphin Tournament. Big Pine & Lower Keys; 305-304-7674; www.fla-keys.com.

July 4: Thunder on the Ridge. Haines City; 863-421-3700; festivalsandevents.com.

July 4: July 4 Getaway. Live Oak; 386-364-1683; www.musiclivehere.com.

July 4-5: Red, White and ZOO. Sanford; 407-323-4450; www.centralfloridazoo.org.

July 10: Spider Prowl. Chinsegut Nature Center; Brooksville; 352-754-6722; MyFWC.com/Chinsegut.

July 11: Annual Underwater Music Festival. Looe Key Reef; Florida Keys National Marine Sanctuary; 305-872-2411; www.fla-keys.com.

July 11: STA 5 Bird Watching Tour. Clewiston; 863-674-0695; www.floridabirdingtrail.com.

July 11-12: Repticon. Pensacola Interstate Fairgrounds; Pensacola; 407-230-7217; www.repticon.com.

July 15-20: Hemingway Days Festival. Key West; www.fla-keys.com; 305-461-3300.

July 18: Tropical Audubon Society workday at the Doc Thomas House. Miami; 305-667-7337; www.tropicalaudubon.org.

July 20-25: AT&T Greater Jacksonville Kingfish Tournament & Festival. Sisters Creek Park, Jacksonville; 904-251-3011; www.kingfishtournament.com.

July 21-24: Del Brown Invitational Permit Tournament. Key West; 305-664-2444; www.fla-keys.com.

July 22-25: Key West Marlin Tournament. Key West; 305-292-2710; www.fla-keys.com.

July 23: Project WILD/AQUATIC WILD. Chinsegut Nature Center; Brooksville; 352-754-6722; MyFWC.com/Chinsegut.

July 24: Summer Safari Nights. Sanford; 407-323-4450; www.centralfloridazoo.org.

July 28: Big Pine Wildflower and Tree Walk. Chinsegut Nature Center; Brooksville; 352-754-6722; MyFWC.com/Chinsegut.

July 31-Aug. 8: Key Largo Food & Wine Festival. Key Largo; 305-522-1300; www.fla-keys.com.

Fishin' **Follies**

The "deal"

By Andy Sabol ~ Illustration by John Papesca

"OK, now here's the deal. We drop your car off at the 41 bridge, and we take the boat up to Frenchie's fish camp and float down from there. It's three, maybe four, hours of floating and catching fish, lots of fish and no work." This was another sales pitch from Todd. He sure could make things sound great.

I bought the plan, and there we were, with the pram loaded and ready to shove off.

It was about 6:30 on a spring morning, and it really looked like a nice day in the making. The shiners in the bait bucket looked eager, and we had the rods rigged. We had salami sandwiches and drinks in the cooler, and no one else was at the ramp. It really was going to be a great day!

As we putted a few hundred yards downstream, we dipped two volunteers from the bait bucket and slowly let them out behind the boat. Perfect.

About a minute later I heard, "Dang!"

Todd was snagged on something, so he turned the boat around and slowly eased back to where his line entered the water. I reeled in his line as we moved closer, and then handed him the rod. He shoved the rod down as deep as he could and proceeded to swish it around, hoping to free his shiner.

"Dang!"

Todd raised his rod out of the water.

"Dang!"

About 3 inches of his rod tip was hanging limply from the shattered end of his rod.

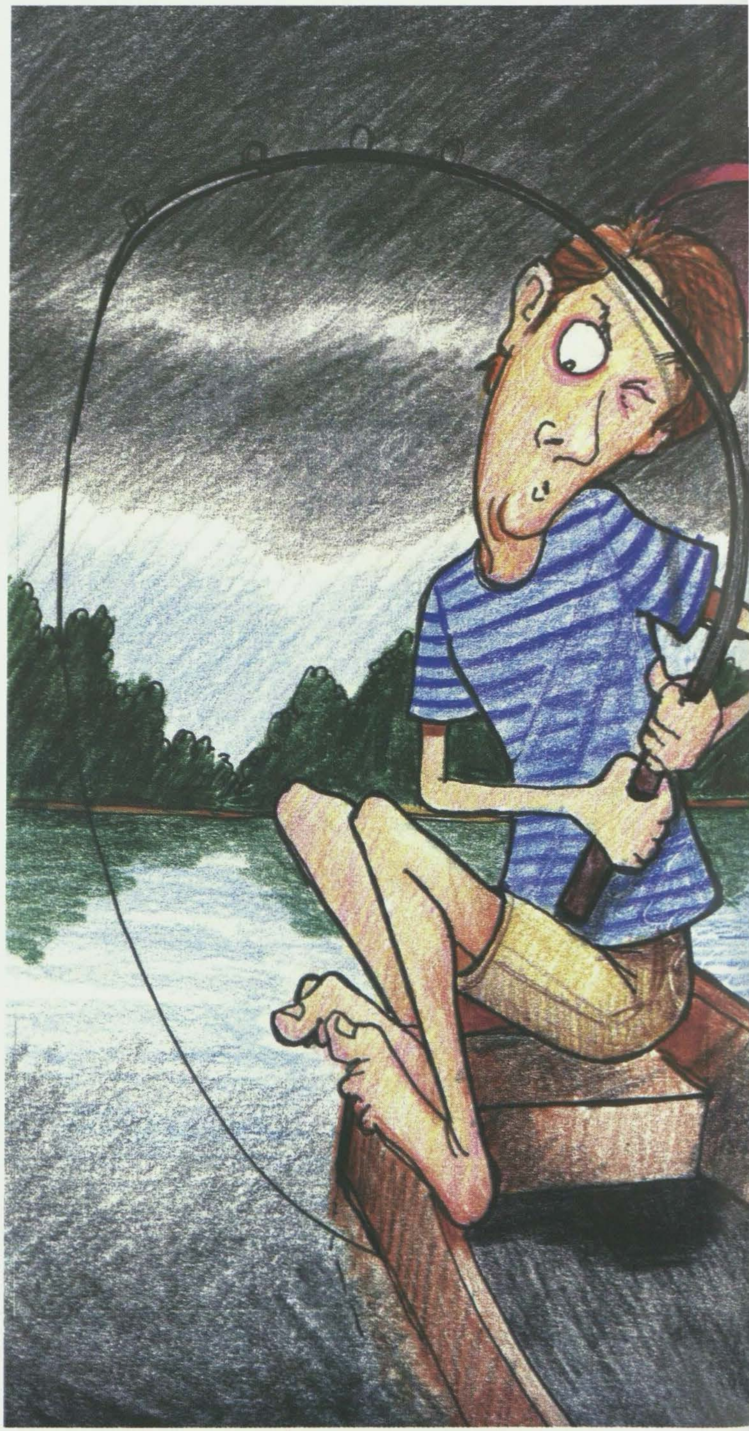
Todd cut his line and carefully placed the injured rod on the bottom of the pram.

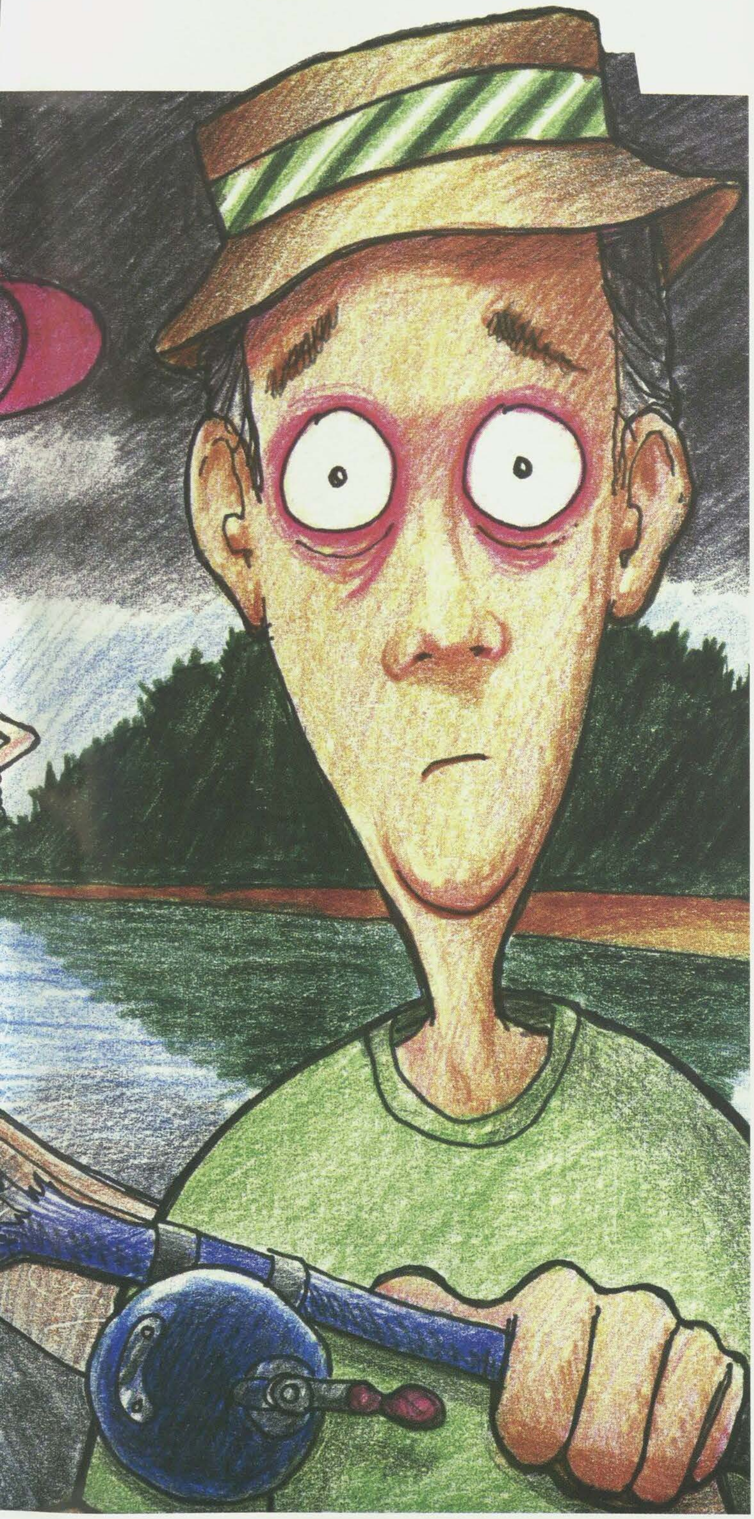
"This is why I always bring a couple of rods."

Todd had a tight smile as he rigged up another shiner on another rod.

It was then I realized that during this entire event my line had been in the water. I picked up my rod and tried to reel in the line. No go. The line went under the boat and straight back to the outboard. Right, we had run over the line, and it was now wound around the prop.

It only took Todd about 15 minutes of cutting and pulling line before we were ready to go again. Of course, I was now missing about 50 yards or so of line. But on the bright side, black bass don't run off much line in a fight.





The speed of the current was just about perfect. We had our two shiners out behind the boat and Todd and I were throwing plugs against the shorelines as we slowly drifted along. However, as of yet we had no fish.

After about two hours of drifting downstream and no fish, we were starting to feel there must have been a reason why there were no other fishermen at the ramp. It was then we heard the first rumble of thunder. We had been so engrossed in casting and talking that neither of us had noticed the big black clouds forming behind us.

Well, it wasn't long before we put on our rain gear and the stuff started to come down – heavy. It was coming down so hard, that fishing was out of the question because it took both of us bailing to keep the boat from sinking. Everything in the pram was floating.

Todd, the ever-positive-minded buddy said, "At least it is a warm rain, and we are halfway down the stream."

I thought he was right, but it still was not what I had in mind when I signed on for this trip.

We really could not eat a sandwich because of the pouring rain, so the only thing to do was have the drinks for lunch. The rain continued without slacking.

"What say we crank-up the kicker and get on down the creek. I think we have given these fish a fair shot, and I don't think they are going to cooperate," I said, giving it my best sales pitch.

"Well, maybe if we do run farther down, we might get away from some of this rain." That was Todd's positivity again.

With me bailing and Todd gunning the motor, we roared down the creek as fast as the little 7 1/2 Johnson would go. But the rain remained steady.

Neither of us had any idea of how many twists and turns there were in that creek. It was right at 2 that afternoon when we finally saw the bridge – through the rain.

Results of the trip? About a dozen and a half very happy shiners, four water-logged salami sandwiches, one broken rod-tip, two thoroughly soaked, tired, hungry fishermen and no fish, but some great fishing memories! FW

Where do you answer the call of the wild?

Photo: Gus Holzer

FWC law enforcement is not a typical 9-to-5 job. Officers work day and night. Their 'patrol' vehicle may be an airboat or swamp buggy, and their 'beat' may be a swamp, forest or as far as 200 miles offshore.

Answer the call of the wild. If you want to help protect Florida's natural resources and people – become an FWC law enforcement officer.

Call (866) FWC-HIRE (392-4473).

Florida Fish and Wildlife Conservation Commission

Division of Law Enforcement

MyFWC.com

Patrol, Protect, Preserve

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